

NORTHEASTERN GREAT BASIN STANDARDS AND GUIDELINES ASSESSMENT
DEETH (SOUTHERN PORTION) AND THE POLE CREEK ALLOTMENTS
2009

Elko District BLM
Wells Field Office

I. Introduction

In accordance with 43 CFR 4180, the Wells Field Office of the Bureau of Land Management (BLM) is required to complete standards and guideline assessments on grazing allotments in order to determine whether or not existing grazing management practices are resulting in the attainment of the standards for rangeland health and are in conformance with the guidelines. The approved standards for rangeland health that are to be evaluated include the following:

Standard 1. Upland Sites: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.

Standard 2. Riparian and Wetland Sites: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

Standard 3. Habitat: Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet life cycle requirements of threatened and endangered species.

Standard 4. Cultural Resources: Land use plans will recognize cultural resources within the context of multiple-use.

In 2003, Draft Standards and Guidelines Assessments were completed for the Deeth and Pole Creek allotments and sent to the public for review and comment as part of the Marys River Complex (MRC) Allotment Evaluation. The BLM proposes to split the Deeth Allotment into the North Deeth and South Deeth Allotments, with separate livestock (cattle) use permittees. This Draft Standard and Guideline Assessment summarizes additional data collected for the southern portion of the Deeth Allotment (hereafter called South Deeth) and the Pole Creek Allotment since the 2003 evaluation, and incorporates comments from the MRC Allotment Evaluation, as appropriate. This assessment also documents the determinations of whether or not we are meeting or making significant progress towards meeting the standards for the South Deeth and Pole Creek Allotments, if we are in conformance with the guidelines, and if we are not meeting the standards or making significant progress towards meeting the standards, assessing if current livestock grazing is one of the significant factors leading to non-attainment of the standards and guidelines.

II. Allotment Description

The South Deeth and the Pole Creek Allotments are located within the Upper Humboldt River Subbasin, in the Marys River watershed. The Marys River watershed drains about 515 square miles. The South Deeth and Pole Creek Allotments are northwest of Deeth, Nevada to the west

of Marys River and east of Stag Mountain. The area lies within the Upper Basin and Range Physiographic Province. Elevation extends from approximately 5300 feet at the southern end of the allotments to 8205 feet on Stag Mountain on the west side of the allotments. The allotments are bordered by Stag Mountain, Devils Gate, and Morgan Hill Allotments to the west, Interstate 80 to the south, Stormy and Antelope Basin allotments to the east, and the North Deeth Allotment to the north (Map 1).

The South Deeth Allotment will consist of 112,304 acres divided into seven pastures: North Hanks, South Hanks, Conners Basin, North Steer, South Steer, South Cross and Winter Creek (Map 2), and gathering pastures (Carlson Fields 1[upper], 2 [middle], and 3 [lower]). The Pole Creek Allotment is a single pasture with 5,633 acres. A summary of the public and private acres is summarized in Table 1.

Table 1. Public and private acres by allotment.

Allotment Name	Pasture Name	Public Acres	Private	Total
South Deeth		97,637	14,667	112,304
	Hanks Creek	30,386	38	30,424
	Conners Basin	14,755	0.0	14,755
	Carlson Fields	636	0.0	636
	Steer Fields	30,910	1086	31,996
	Winters Creek	19,022	13,091	32,112
	South Cross	1930	453	2383
Pole Creek		5,303	330	5,633

These allotments do not have formalized grazing systems. However, the term grazing permit for cattle use does contain terms and conditions that require the permittees to meet with BLM annually to discuss the monitoring results from the previous year and outline a grazing system to ensure attainment of the multiple use objectives.

Sheep use in the Pole Creek Allotment is usually for a week in the spring. The permittee usually trails from a fenced private pasture within the Pole Creek Allotment north through Devils Gate and Stag Mountain Allotments to the north end of the North Deeth Allotment before reaching U.S. Forest Service administered lands. Some years the sheep are trailed through the Deeth Allotment (South Deeth and North Deeth) to reach Forest Service lands. Sheep use in the Deeth Allotment has been incidental. Following the 1996 Indian Creek Land Exchange 37 AUMs remained as grazing preference within the Pole Creek Allotment. An additional 120 AUMs were identified on the Deeth Allotment and 192 AUMs on the Pole Creek Allotment as temporary nonrenewable use (TNR) pending completion of an allotment evaluation to determine the appropriate carrying capacity and proportionate allocation of grazing privileges for these TNR AUMs. This standards and guidelines assessment and term permit renewal process will address this TNR use.

III. Additional Data Summary

A. Actual Use Summary 1988-2008.

Actual use data is provided annually by permittee, by allotment, and by pasture to determine the amount of AUMs used by livestock during each grazing year. Table 2 below reflects the average actual use by allotment during the evaluation period. Actual use summary data by year can be found in Appendix 11A

Table 2. Average actual use by livestock during the evaluation period and in comparison with total permitted use.

Allotment	Years included in average	Total Permitted Use per Term Grazing Permit (AUMs)	Average Actual Use (AUMs)	Percent (%) permitted use
South Deeth	1988-2008	17,488	12,185	70%
Pole Creek	1988-2008	598	486	81%
Allotment Totals		18,086	12,671	

B. Livestock Use

Table 3 lists the allotments, grazing preference, season of use, and kinds of livestock permitted on each allotment as outlined in the Wells Resource Management Plan (RMP).

Table 3. Summary of animal unit months (AUMs), season of use, and kind of livestock by allotment as outlined in the 1986 Wells RMP.

Allotment Name	Grazing Preference (AUMs)	Season of Use	Kind of Livestock
Deeth (including South Deeth, North Deeth, and what is now the Antelope Basin Allotment)	22,437	4/10-12/31	Cattle Sheep ¹
Pole Creek	516	4/1-10/31	Cattle Sheep ¹
Total	22,953	n/a	

¹Up to 1996, exchange-of-use for sheep grazing was allowed in the Deeth Allotment (125 AUMs). Sheep use within the Deeth Allotment has mostly been trail use and the amount of use has been incidental.

Several land exchanges and other actions have occurred within this area resulting in changes to AUMs. Antelope Basin Allotment was separated from the Deeth Allotment in the 1991 Marys River Land Exchange. Grazing transfers have also occurred, resulting in changes to seasons of use and permittees. Table 4 shows the current permittees and season of use for the South Deeth and Pole Creek Allotments.

Table 4. Summary of current animal unit months (AUMs) for South Deeth and Pole Creek Allotments.

Allotment Name/Permittees	Grazing Preference (AUMs)		Season of Use	Kind of Livestock	% Public Land
	Active	Historic Suspended			
South Deeth Cross Ranch LLC Eureka Livestock LLC	17,488 -- ¹	0 0	4/1-12/31 -- ¹	Cattle Sheep	89 to 100 ² 100
Pole Creek Cross Ranch LLC Eureka Livestock LLC	561 37 ¹	0 0	4/1-10/31 4/1-10/31	Cattle Sheep	97 100
Total	21,056	20	n/a	n/a	n/a
¹ As a result of Part I (Phases I, II, III, and IIIa) and Part II (Phase I) of the 1996/1997 Western Resource Management Indian Creek Land Exchanges, TNR use was authorized for Lasgoity (transferred to Eureka Livestock LLC) on the Deeth (120 AUMs) and Pole Creek Allotments (192 AUMs). The TNR AUMs are being evaluated during the allotment evaluation and multiple use decision process to determine the extent to which the TNR AUMs can be converted to regular permitted use. ² The term grazing permit for Cross Ranch LLC reflects use at 100% public land with the exception of the Winter Creek Pasture which is licensed at 89% public land.					

C. Key Area Utilization

A key area is a relatively representative site within a pasture selected to monitor change in vegetation or soil and the impacts of management. A key area is monitored to show how management is affecting similar areas in the pasture. In the South Deeth Allotment, key area utilization data has been collected in the Winter Creek, Hanks Creek, and Steer pastures between 1987 and 2004. In the Hanks Pasture, utilization of key forage species ranged from 29% to 69% (1987 and 2004). In the Winter Creek Pasture, utilization ranged from 15% to 40% (1987 to 2002). In the Steer Pasture, utilization ranged from 32% to 62% (1987 and 2004). Some key areas have more than one key forage species. The use levels described above represent the highest levels of annual use on key forage species at the key area in each pasture. A summary of the annual utilization results for the South Deeth portion of the Deeth Allotment is outlined in Appendix 11 B.

D. Use Pattern Maps

Use pattern maps indicate the degree and pattern of use on key forage species by all grazing animals on the pasture or allotment and indicate areas that are underused, overused, and properly used. Use pattern data can then be used to identify distribution problems which can be dealt with during adjustments to the management plan. Use pattern data were also used in calculating grazing capacities. Use pattern maps are available for the Winter Creek, Steer, Conners Basin, South Cross, and Hanks pastures of the South Deeth Allotment. Generally, moderate and heavy use areas are near water sources, with none/slight/light use areas in the outlying areas farther

from water and where topography contributes to reduced availability to livestock. Use pattern maps are available at the Wells Field Office.

E. Grazing Capacity Analysis

The Marys River Complex Allotment Evaluation issued in November 2003 included an analysis of grazing capacity (carrying capacity) based on the livestock grazing practices during the evaluation period. Following the collection of additional utilization and actual use data in 2004, the grazing capacity analysis has been updated for the South Deeth and Pole Creek Allotments and can be found in Appendix 10. The updated analysis includes some changes including standardization of the utilization objectives, calculation of separate grazing capacities for the spring use period and the summer/fall use period, and calculation of the grazing capacities for yearlings as well as cow/calf pairs, or combinations of yearlings and cow/calf pairs. As a result of the updated capacity analysis, there are substantial differences in grazing capacity for many pastures between the 2003 evaluation and the updated analysis. The updated analysis is also based on current livestock grazing practices during the evaluation period; however, these grazing capacities may change as a result of new adjustments in management, and as a result of alterations to the plant communities caused by fire, insects, climate, etc.

F. Trend (Frequency)

Frequency measures the change in the presence or absence of a plant species in the community over time. Long-term frequency data collected between 1987 and 1995 are available for some of the pastures within the South Deeth Allotment. No frequency data were collected for the Pole Creek Allotment.

The Marys River Complex Allotment Evaluation issued in November 2003 included an analysis of the frequency trend data. The 2003 evaluation displayed the results of that data analysis which showed, in some cases, there were significant increases or decreases in certain key forage species. However, after reviewing the frequency data again, we have concluded there may not have been significant increases or decreases in the key forage species and that generally the frequencies of the key forage species did not change significantly. It appears that the significant changes noted in the 2003 evaluation may have been due to some difficulty identifying certain plant species. The data from the 2003 evaluation along with the results of the most recent review of the frequency data for the South Deeth Allotment can be found in Appendix 11 C.

G. Weight-Estimate Production Data/Ecological Condition

Weight-estimate production data determines the production at a site in relation to its site potential and from this information, ecological condition is determined.

South Deeth Allotment

Four pastures in the South Deeth Allotment (Winter Creek, South Hanks, North Hanks, and Steer [North and South]) had weight-estimate production data and ecological condition determinations completed between 1987 and 1995. All four pastures were in mid to late seral ecological condition before the 2001 and 2006 wildland fires.

After reviewing the data since the 2003 evaluation was issued, some adjustments were made to the data on the Winter Creek and South Hanks key areas. The changes were applied to the

growth stage (phenological stage/dry weight) correction factors and adjustment of the percent composition values used to calculate the ecological condition ratings. Although these adjustments resulted in some changes to the calculated condition ratings, the changes were not significant enough to change the conclusion that ecological conditions in the allotment generally remained static with some improvement noted for the key area in the Winter Creek Pasture. The ecological condition summaries from the 2003 evaluation can also be found in Appendix 11 D along with the results and changes from the most recent review of the data.

Pole Creek Allotment

Ecological status inventory completed for the Pole Creek Allotment in 1987 showed approximately 44 percent of the allotment in late seral status and the remainder of the allotment in mid-seral status.

H. Post Fire Monitoring

Like a key area, post fire monitoring points are small portions of a pasture or allotment within a specific treatment (such as aerial seeding) selected as representative areas to monitor rehabilitation of burned areas. In the South Deeth Allotment, post fire monitoring has been collected for a total of five out of the last eight years. After the Isolation and Stag fires of 2001, post fire monitoring was conducted in 2002, 2003, and 2004. After the 2006 Charleston Complex Fires, post fire monitoring was conducted in 2007 and 2008. Monitoring data will also be collected in the summer/fall of 2009. Post fire monitoring data are collected in order to determine success of rehabilitation treatments and to determine how unseeded (native release) areas are recovering. With this information, fire closures that were put into place under stabilization measures, are either lifted or extended depending on how the area is recovering and whether or not criteria are being met.

I. Terrestrial Wildlife Species

The South Deeth and Pole Creek Allotments, in association with the surrounding habitat, provide habitat for numerous bird, mammal, reptile, and amphibian species that commonly or occasionally inhabit sagebrush, aspen, and mountain mahogany habitats throughout northeastern Nevada. Additional species commonly associated with the riparian and meadow habitat types are likely also present. A list of species that potentially inhabit the types of habitats found in this allotment are presented in Appendices 3 through 8. The BLM developed these lists from multiple sources and considers them to be a representation of the species most likely to be present on or transitory through these allotments.

These allotments provide approximately 70,668 acres of crucial summer habitat and 47,270 acres of intermediate habitat for mule deer (Map 3), 50,031 acres of summer habitat and 20,165 acres “crucial” winter habitat for antelope (Map 4), and 10,229 acres of yearlong habitat for elk (Map 5). The range of elk and antelope is expanding within these allotments as fire changes the dynamics of the rangeland. In addition, the allotments provide approximately 115,171 acres of sage grouse winter (Map 6) habitat, 117,937 acres of sage grouse summer habitat (Map 7), and 30,570 acres of sage grouse breeding habitat (Map 8), as well as habitat for a diversity of additional wildlife species including upland game birds, small mammals, passerine birds, waterfowl, raptors, amphibians, reptiles, and invertebrates.

Special status species include species that are listed or proposed for listing as threatened or endangered (T&E) under the Endangered Species Act (ESA), species that are candidates for listing under the ESA, species that are listed by the State of Nevada and/or species that are on BLM's list of Sensitive Species as of July 29, 2003. See Appendices 3-5 for a list of these species.

1. Federally Listed Species

At this time, there are no federally listed endangered species known to occur within these allotments. The Lahontan cutthroat trout (LCT), a federally listed threatened species under the ESA since 1970, is present in Hanks Creek in the South Deeth Allotment. The Columbia spotted frog (CSF) (*Rana luteiventris*), a candidate species, is likely to occur in the South Deeth and potentially in the Pole Creek Allotments.

Bald eagles are potential winter residents and may use the area due to the proximity to winter foraging areas. On July 9, 2007, the bald eagle was removed ("de-listed") from the list of threatened and endangered species. BLM is coordinating with the Nevada Department of Wildlife (NDOW) to ensure compliance with state regulations regarding the bald eagle. As of August 30, 2007, BLM policy is to consider the bald eagle as a BLM Sensitive Species.

After de-listing, bald eagles will continue to be protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act. Both of these laws prohibit killing, selling or otherwise harming eagles, their nests, or their eggs. In June 2007, the U.S. Fish and Wildlife Service (FWS) clarified its regulations implementing the BGEPA and published the National Bald Eagle Management Guidelines.

The FWS is in the process of establishing a permit program under the BGEPA that would authorize limited take of bald and golden eagles consistent with the purpose and goal of the BGEPA. The FWS has also prepared a draft post-delisting bald eagle monitoring plan. These documents and more information about the bald eagle are available on the FWS's website at <http://www.fws.gov/migratorybirds/baldeagle.htm>.

Based on the diversity of predominant habitats present in the South Deeth/Pole Creek Allotments, including sagebrush/grass, mountain shrub, aspen, meadows and stream systems, the area likely supports a variety of BLM sensitive species including raptors, bats, pygmy rabbits, Preble's shrew, as well as known populations of sensitive migratory bird species and sage grouse. Appendix 9 identifies those species which are likely or are known to occur in the allotments. Appendices 3-8 list habitat types and/or life zones where these and other species are expected to be found.

2. Species Petitioned for Listing

a. Sage Grouse – The South Deeth/Pole Creek Allotments provides approximately 30,570 acres of sage grouse nesting/early brood rearing habitat, 115,171 acres of winter habitat and 117,937 acres of summer/late brood rearing habitat. Eleven currently active and historic sage grouse leks (breeding areas) have been identified within the allotments (pre-2006 Charleston Complex Fire).

Sage grouse are considered sagebrush “obligates” because they feed almost exclusively on sagebrush until forbs reappear in the spring. Sage grouse are also dependent on healthy and diverse age structures of sagebrush to provide habitat for successful nesting, brood-rearing and winter use areas. During the spring, sage grouse utilize forbs, which are high in calcium, phosphorous and protein, to prepare them nutritionally for breeding. Sage grouse chicks rely heavily on forbs and insects, in their diets. Habitats that provide a diversity of plant species also support a wide diversity of insects, which are essential to chicks. Riparian areas are critical to sage grouse during late brood rearing. As upland habitats start to dry up hens usually move their chicks to more moist riparian sites where succulent vegetation is readily available.

Habitat components that fulfill yearly life requirements for sage grouse are summarized below:

1. Lek: strutting grounds found in open areas surrounded by sagebrush where males display in late-February through early-May to attract females for breeding. Leks and approximately a two-mile radius around the lek are the focal point of the breeding and nesting complex. Areas larger than the two-mile radius may be necessary where sagebrush communities are heavily fragmented.
2. Nesting and early brood rearing habitat: used in late-March through June. Suitable habitat requires nesting cover, food availability and sagebrush stands with a robust understory of grasses and forbs. Bluebunch wheatgrass is a preferred grass because of its growth form. An ample variety, distribution and abundance of forbs and insects such as ants and beetles, are needed as food for chicks.
3. Late brood-rearing habitat: late-June through October. Preferred habitat includes healthy riparian areas, wet meadows, and upland plant communities with available food, primarily forbs such as:

- Yarrow (*Achillea*)
- Buckwheat (*Eriogonum*)
- Dandelion (*Taraxicum*)
- Prickly lettuce (*Lactuca*)
- False Dandelion (*Agoseris*)
- Paintbrush (*Castilleja*)
- Salsify (*Tragopogon*)
- Hawksbeard (*Crepis*)

Forb abundance, diversity and availability are crucial. Close proximity to escape cover (sagebrush) is also important.

4. Winter habitat: November to early-March. South-facing and/or wind-swept gentle slopes. Sagebrush (for cover and food) must be available during periods of deep snow.

Before the fires of 2001 - 2006 (Map 9), these allotments contained a variety of habitat types, including diverse sagebrush communities, openings, and riparian and meadow habitats, critical

for sage grouse to complete their life cycles. While portions of the allotments still contain this variety of habitat types, large portions of the sagebrush communities have been changed to grassland-dominated communities.

Approximately 16% (19,268 acres) of the South Deeth/Pole Creek Allotment area is located within the North Fork Sage Grouse Population Management Unit (PMU) and the remaining 84% (98,670 acres) is within the O'Neil Basin Sage Grouse PMU. Sage grouse population estimates in the Draft Northeast Nevada Sagebrush Ecosystem Management Plan range from 8,305 to 9,967 for the O'Neil Basin PMU and 10,046 to 12,055 for the North Fork PMU. Trend estimates are static with a long term downward trend. High risks for sage grouse populations identified in the "Elko County Sagebrush Ecosystem Conservation Strategy" for the O'Neil Basin PMU include the following: [declining] habitat quality (fire impacts, cheatgrass invasion, etc), changing land uses, fire ecology, predation, disturbance, disease and pesticides, hunting/poaching, cycles/populations and climate/weather.

b. Pygmy Rabbits –Pygmy rabbits are found in a variety of vegetation types, including big sagebrush, that are suitable for creating their burrow system. Pygmy rabbits have been documented in the South Deeth and Pole Creek Allotments. The sites were within stands of big sagebrush. In addition, the Nevada Natural Heritage Program has identified the presence of pygmy rabbits in the vicinity of the allotments as recently as 1993.

3. Nevada BLM Sensitive Avian Species

In addition to sage grouse and bald eagles, the area provides potential and/or documented habitat for other avian Nevada BLM Sensitive Species on a seasonal or yearlong basis including the northern goshawk, Swainson's hawk, ferruginous hawk, golden eagle, prairie falcon, peregrine falcon, Columbian sharp-tailed grouse, mountain quail, sandhill crane, long-billed curlew, black tern, long-eared owl, short-eared owl, flammulated owl, burrowing owl, Lewis's woodpecker, red-naped sapsucker, loggerhead shrike, gray vireo, pinyon jay, juniper titmouse, yellow-breasted chat, vesper sparrows, bobolink, and black-rosy finches.

a. Northern goshawk – This is a potential year-round resident of these allotments. Nesting habitat in the allotments is primarily in aspen stands. Foraging habitat includes sagebrush and mountain mahogany habitats.

b. Swainson's hawk – This is a documented summer resident of these allotments. Narrowleaf cottonwood and quaking aspen stands on riparian corridors provide primary nesting habitat. Grassy sagebrush areas on the allotment provide foraging habitat during summer and during migration or seasonal movement events.

c. Ferruginous hawk – This is a potential year-round resident of these allotments. In Nevada, this species prefers to nest in scattered juniper woodlands that are found on the edge of salt desert shrub or sagebrush vegetation types overlooking broad valleys. They could also nest on the top of tall sagebrush or other shrubs (≥ 6 feet tall), rocky outcrops, manmade structures or within deciduous trees such as quaking aspen or cottonwoods. Maintenance or improvement of habitat for prey species such as rodents or rabbits would help to provide foraging habitat for ferruginous hawks.

d. Golden eagles – This is a documented year-round resident of these allotments. Foraging habitat occurs anywhere small mammal prey species are abundant. Nesting occurs in cliffs and talus areas.

e. Prairie falcon – This is a documented year-round resident of these allotments. Foraging habitat occurs anywhere small mammal prey species are abundant. Nesting occurs in cliffs and talus areas with south facing aspects.

f. Peregrine falcon – This bird is a potential summer resident of these allotments. This species has been documented on the eastern edge of the district, but potential habitat does occur within these allotments for this species. Should their range expand into the area, these allotments would provide foraging habitat anywhere small mammal prey species are abundant but mostly near riparian areas. Nesting occurs in cliffs and talus areas.

g. Columbian sharp-tailed grouse – This is a potential year-round resident of these allotments. This species has recently been released on the northern edge of the district and subsequent range expansion has not yet been documented. However, habitat does occur within these allotments for this species. Should their range expand into the area, these allotments would provide foraging, nesting, and brood-rearing habitat in sagebrush communities, particularly those with interspersed bunchgrasses and adequate forb diversity. Additional foraging habitat could occur in aspen and mountain mahogany areas.

h. Mountain quail – This species is only considered to be incidental to this District. However, habitat does occur within these allotments for this species. Should their range expand into the area, these allotments would provide foraging, nesting, and brood-rearing habitat in sagebrush, aspen, and/or mountain mahogany communities within a few hundred yards of water with moderate to dense shrub densities.

i. Sandhill crane – This is a potential summer resident of these allotments. Potential foraging, nesting, and roosting habitat exists along riparian areas.

j. Long-billed curlew – This is a potential summer resident of these allotments. Potential foraging and nesting habitat exists along riparian areas.

k. Black tern – This is a potential summer resident of these allotments. Potential foraging and nesting habitat exists along riparian areas. Areas with a good mix of open water and emergent vegetation are preferred for nesting.

l. Long-eared owl – This is a documented year-round resident of these allotments. Foraging and nesting habitat exists along riparian areas. Areas with a good mix of open water and emergent vegetation are preferred for nesting.

m. Short-eared owl – This is a documented year-round resident of these allotments. This ground-nesting species primarily uses riparian areas within these allotments.

n. Flammulated owl – This is a potential summer resident of these allotments. Potential nesting habitat exists in mountain mahogany areas. This species may also use aspen stands, particularly during migration.

o. Burrowing owl – This is a documented summer resident of these allotments. Abandoned mammal burrows, such as those created by badgers, help to provide nesting habitat. This species tends to use disturbed or open sites with minimal vegetation for nesting and loafing, such as recent burned areas or areas near troughs, corrals, or livestock mineral licks and along roads where open terrain exists.

p. Lewis's woodpecker – This is a potential summer resident of these allotments. Aspen woodlands provide good habitat for this typically forest dwelling species.

q. Red-naped sapsucker – This is a documented summer resident of these allotments. Aspen and mountain mahogany woodlands as well as wooded lowland riparian corridors provide good habitat for this typically forest dwelling species.

r. Loggerhead shrike – This is a documented year-round resident of these allotments. Nesting habitat is provided in these allotments primarily by basin and Wyoming big sagebrush, and mountain mahogany. Foraging habitat is provided in sagebrush-grass areas with variable canopy cover of brush species.

s. Juniper titmouse – Habitat for this species is mostly limited to piñon-juniper areas (which are not found within these two allotments), but they will occasionally use mountain mahogany.

t. Yellow-breasted chat – This is a documented summer resident of these allotments. Habitat for this species occurs along riparian areas.

u. Vesper sparrows – This species is a ground-nester. Habitat for this species occurs in sagebrush or mountain mahogany areas. Maintaining 10 to 15% shrub foliar cover would help to improve habitat for this species.

v. Bobolink – This is a documented summer resident of these allotments. Habitat for this species is mostly limited to grassy riparian areas.

w. Black-rosy finch – This is a potential year-round resident of these allotments; however abundance is likely greater during winter. These allotments provides suitable winter habitat on sagebrush grasslands as well as in stands of mountain mahogany. Breeding habitat can be found in cliffs and talus.

4. Nevada BLM Sensitive Mammalian Species

In addition to pygmy rabbits, the area provides potential habitat for other Nevada BLM Sensitive Mammalian Species on a seasonal or yearlong basis including the Preble's shrew, a variety of bats, and river otter.

a. Preble's shrew – This is a potential year-round resident of these allotments. Sagebrush-grass communities in close proximity to riparian areas are typically considered good quality habitat for this species. The Nevada Natural Heritage Program has identified the presence of Preble's shrews in the vicinity of the allotments as recently as 1986.

b. Bats – Bats may be either year-round or summer residents in the Elko district and during winter may hibernate, migrate south, migrate altitudinally, or have periods of temporary inactivity. These allotments provide potential habitat for the following species of bats: pallid bat, Townsend's big-eared bat, big brown bat, spotted bat, silver-haired bat, western red bat, hoary bat, California myotis, western small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, western pipistrelle, and Brazilian free-tailed bat.

In general, bats use water between night-time foraging bouts. Bats are also attracted to insects often found around water sources. For this reason, riparian areas are very important foraging habitats. All habitats within the allotments are used by at least some species of bats for foraging purposes. Roosting will typically occur in cliffs and talus, or aspen habitats, or in other habitats outside of these allotments such as piñon-juniper. Manmade water sources provide habitat for insects and, in turn, could provide foraging habitat and water sources for bats.

c. River otter – This is a potential year-round resident of the South Deeth Allotment and are known to occur in Marys River. Riparian areas with open water provide habitat for this species.

5. Nevada BLM Sensitive Reptile and Amphibian Species

The area provides potential habitat for several Nevada BLM Sensitive Reptile or Amphibian Species on a yearlong basis including the short horned lizard, Sonoran mountain kingsnake, and northern leopard frog.

a. Short-horned lizard – Potential habitat for this species includes sagebrush communities.

b. Sonoran mountain kingsnake – This is a potential resident of these allotments. Habitat for this species includes mountain mahogany woodlands. This species is associated with montane habitats as well as rocky areas and riparian areas.

c. Northern leopard frog – This is a potential resident of these allotments. Habitat for this species is restricted to riparian areas. The Nevada Natural Heritage Program has identified the presence of northern leopard frogs in the vicinity of these allotments.

6. Invertebrate Species of Concern

The Nevada Natural Heritage Program has identified the presence of the Nevada viceroy butterfly and the Humboldt pyrg snail in the vicinity of the allotments as recently as 1984 and, 1990 respectively. The former is a former candidate species and the latter is a current BLM sensitive species. The Nevada Natural Heritage Program also documented the Nevada water mite in 1927 in these allotments.

J. Wildland Fires

Seven wildland fires have occurred within the South Deeth and Pole Creek Allotments since 2001 and are shown on Map 9. These fires have resulted in some adjustments to grazing management within the affected pastures within the allotments. These fires include the 2001 Isolation and Stag Mountain fires, the 2006 Charleston Complex which included the Charleston, Gopher, Marble, and Lower Marble Fires, and the 2008 Gopher II Fire.

1. Isolation and Stag Mountain Fires

The Isolation and Stag Mountain fires burned in 2001, affecting the Deeth, Pole Creek, and Stormy Allotments. Within the area assessed by this Standards and Guidelines Assessment, the Isolation fire burned 11,251 acres mostly in the Steer, Conners Basin, and Hanks Pastures of the South Deeth Allotment as well as a portion of the Pole Creek Allotment. The Stag Mountain fire burned 13,385 acres in the Conners Basin, Carlson Field, and Hanks Pastures of the South Deeth Allotment. A livestock grazing closure agreement to allow for rehabilitation of the burned areas was drafted for the South Deeth and Pole Creek Allotments. However, the permittee did not make application for use of the burned area until the establishment criteria were attained.

The rehabilitation measures for these two fires included aerial watershed seeding, aerial range-wildlife seeding, aerial wildlife seeding, aerial/dribble bitterbrush seeding, and fence construction and reconstruction.

Over 30 miles of fence were burned and repaired or reconstructed and over 13 miles of new fence construction was completed. Two new temporary fences were constructed within the South Deeth Allotment: the Isolation ESR Fence and Hanks Creek ESR Fence. The Isolation ESR Fence created the North and South Steer Pastures while the Hanks Creek ESR Fence created the North and South Hanks Pastures (Map 10). These temporary fences are identified for analysis for conversion to permanent fences in one of the alternatives.

2. Charleston Complex Fire

In 2006, the Charleston Complex burned a total of 191,607 acres (Map 9). These fires were ignited by dry lightning and burned between July 24 and August 21, 2006. Within the area of this Standards and Guidelines Assessment, the Charleston fire burned 42,036 acres in the Conners Basin, North Hanks, South Hanks, North Steer, and South Steer Pastures of the South Deeth Allotment as well as the Pole Creek Allotment. The Gopher fire burned 12,596 acres in the Winter Creek and South Steer Pastures of the South Deeth Allotment, as well as some private land within the South Cross Field of the South Deeth Allotment. The Marble fire burned 4,243 acres in the Winter Creek and South Steer Pastures of the South Deeth Allotment. The Lower Marble fire burned 181 acres in the Winter Creek Pasture of the South Deeth Allotment.

The fires were primarily wind driven during the day and burned with low intensity at night. Some of the fire flanks burned out due to lack of fuels, particularly in the northern portion. In the western portion, some of the fire burned into areas treated by prescribed fire over the last three years, ran out of fuels and went out. Overall, the area burned by the Charleston Complex experienced low to moderate fire intensity with some small patches of high fire intensity. Most of the fire includes a mosaic pattern of burned area interspersed with unburned patches. A small portion of the headwaters of Conners Creek burned in the Charleston Fire of 2006.

Approximately nine miles of Hanks Creek were within the Charleston Fire perimeter, mostly in the South Deeth Allotment. Burn severity was low on approximately five miles of this reach, with no burn severity detected on the remaining four miles. Overall, fire effects to soils were determined to be low.

The uplands around the headwaters of the North Fork of Hanks Creek burned, but most of the rest of the headwater drainages did not. The fire did not burn much of the lower Hanks Creek Exclosure, but burned about nine miles of Hanks Creek above that exclosure, including a smaller exclosure upstream. Approximately 50 percent of the riparian community along Hanks Creek experienced moderate to heavy fire intensity, especially where large sagebrush was adjacent to the stream, resulting in mortality or top-kill of most of the vegetation in these areas. These high mortality areas are interspersed with unburned or minimally affected areas. Upland sagebrush vegetation communities adjacent to the riparian zone burned more completely. This burn pattern includes the portion of the drainage where LCT occurs.

The potential was low for increased sediment loading into Hanks Creek because most of the watershed experienced fire behavior that resulted in low to moderate burn severity. Increased soil movement from the drainage slopes and terraces, as a result of the fire, was minimal. Ash flow into the creek may have decreased water pH and water temperature may have increased due to loss of shade from burned riparian vegetation, but this was not documented. BLM flew the burned segment of Hanks Creek by helicopter in June 2007 and June 2008 and estimated that six and one half miles was PFC and two miles was functional-at-risk with an upward trend (FAR ↑). Willow regrowth was good to excellent in most areas.

Approximately 75 percent of the public acres within the Pole Creek Allotment and more than 75 percent of the public acreage in the South Deeth Allotment have been impacted by fire between 2001 and 2006. As a result of these burns and the change in plant communities from those dominated by sagebrush to a more herbaceous dominated landscape, summer and winter habitat for species such as pronghorn antelope and elk have become more favorable. Habitat conditions for wildlife species which rely on shrubs for a substantial portion of their diet or for vertical structure, including such species such as mule deer, and sagebrush obligates including sage grouse (sensitive species), sage thrashers and sage sparrows have declined.

The majority of the burned area has recovered to where existing ground cover is adequate for proper infiltration and permeability.

3. Gopher II Fire

In 2008, the Gopher II fire burned 343 acres (<1%) in the Winter Creek Pasture of the South Deeth Allotment. No grazing closure was issued because of the small size of the burn and very low percentage of the Winter Creek Pasture.

IV. DETERMINATIONS

This section makes determinations regarding:

- A. Progress towards or attainment of the standards for rangeland health,
- B. Whether livestock management is in conformance with the guidelines, and
- C. Whether existing grazing management or levels of grazing use are significant factors in failing to achieve the standards or conform to the guidelines.

These determinations, along with rationales, are based on the 2003 draft MRC Allotment Evaluation (AE) as well as any supplemental information presented above. Please refer to the 2003 AE for more detailed information.

Standard 1. Upland Sites: Upland sites exhibit infiltration and permeability rates that are appropriate to soil type, climate, and land form.

This standard has been met on the South Deeth Allotment for those areas not impacted by recent wildfires. In addition, areas affected by recent wildfires on the South Deep Allotment are making significant progress towards the standard.

Progress on this standard for areas burned on the Pole Creek Allotment can not be determined.

Current livestock grazing has been determined to not be a causal factor in nonattainment of this standard.

Unburned Areas

South Deeth Allotment

The uplands within the South Deeth Allotment have remained static overall. Long-term studies (frequency and ecological status) indicate that while there have been some increases in the frequency of key forage species, there have been no statistically significant changes. In the Winter Creek Pasture there was a noticeable increase in ecological condition, but no significant changes in the other pastures. Overall ecological conditions remain in mid- or late seral. While no cover studies have been completed on these allotments in the unburned areas, field observations and static ecological conditions on these allotments indicate that existing ground cover in the areas of the South Deeth Allotment not impacted by recent fires is adequate for proper infiltration and permeability on these sites.

Pole Creek

Ecological status inventory completed in 1987 showed the allotment in mid- to late seral status. However, inadequate data are available to make a full determination of this standard for approximately one-half of the allotment that is unburned.

Burned Areas

South Deeth and Pole Creek

The portions of these two allotments that were impacted by wildfires are improving. The burned areas have been closed to grazing and vegetation has reestablished adequately to attain this standard. The majority of the burned areas have recovered to where existing ground cover is adequate for proper infiltration and permeability. Fire rehabilitation and stabilization data

collected following the Isolation, Stag, and Charleston Complex Fires show that on 85% of the monitoring sites, bared ground has decreased as measured from one year following the fire to three years following the fire (See Appendix 13 for detailed ground cover data.).

Measurements of bare ground are an indirect indicator of soil infiltration and permeability rates. Bare ground decreasing following wildfires correlates with increases in litter and vegetative cover and shows recovery of site stability and a decrease in site susceptibility to erosion.

Conclusion

In conclusion, this standard has been met for the uplands in the South Deeth Allotment that were not affected by the wildfires and progress is being made in areas impacted by the wildfires. There are inadequate data to make a full determination of the standard for the unburned portion of the Pole Creek Allotment.

Standard 2. Riparian and Wetland Sites: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

South Deeth Allotment - **Partially met with some areas making significant progress towards the standard.** Livestock grazing is considered the causal factor for those riparian areas failing to make significant progress, and therefore livestock grazing management is not in conformance with the guidelines for rangeland health.

Pole Creek Allotment - **Partially met with some areas making significant progress towards the standard.** Livestock grazing is considered the causal factor for those riparian areas failing to make significant progress, and therefore livestock grazing management is not in conformance with the guidelines for rangeland health.

South Deeth Allotment

A. Lotic Sites:

Proper Functioning Condition (PFC) assessments were conducted on more than 19 miles of lotic riparian areas on the South Deeth Allotment (Map 12). Livestock grazing is authorized on about nine miles of the 19 miles of streams in the South Deeth Allotment, and the remaining 10 miles are excluded from grazing. Ratings varied from non-functional in areas where livestock congregate and loaf to PFC in inaccessible canyon areas. Livestock impacts, such as hoof shear, bank trampling, and heavily grazed willows were observed in reaches at risk. PFC assessments of stations 2 and 3 within the lower Hanks Creek exclosure in 2004 showed that this reach was PFC. Station 4 was FAR with no apparent trend because it was located at a stream crossing and within a water gap. Post Charleston Complex fire assessments in 2007 and 2008 indicate that 6.5 miles were PFC and 2.5 miles FAR-up.

B. Lentic Sites:

In 1993, 12 spring exclosures were built in the South Deeth Allotment (Map 13). About 220 acres of lentic riparian areas were assessed in 1998 (MR/98--). From this assessment a total of 165.5 acres, or 75%, were rated PFC, with 150 of the PFC acres in the upper Carlson Field #1, where BLM authorizes limited grazing use. In 2003, six springs, including Carlson Field #, were

assessed with three rated as FAR-up or PFC (03/--). The balance were rated as FAR-down or NF (Table 5). One of the NF sites had the water piped away to a trough and one of the FAR-up sites had a stock pond present. Livestock use was identified as a causal factor for non-attainment of this standard.

Table 5. South Deeth Allotment Lentic Site Proper Functioning Condition Assessment.

Spring No.	Pasture	PFC Status	Water Flow	Developed	Notes/Comments/Recommendations
MR/98/14	Carlson 1	PFC	Perennial	None	Exclosure
MR/98/10	Connors	PFC	Perennial	None	Springbox/pipeline
MR/98/16	Connors	PFC	Perennial	None	
MR/98/31	Steer	FAR↑	Perennial	None	Springs 1 & 2
MR/98/32	Steer	FAR↔	Perennial	None	Spring 3
MR/98/33	Steer	FAR↓	Perennial	None	Springs 4, 5, & 6
03/01	Winter	NF	Dry	Trough	
03/02	N. Steer	FAR↑	Perennial	Ponded?	
03/03	N. Steer	NF	Perennial	None	
03/04	N. Steer	FAR↑	Perennial	None	
03/05	N. Steer	FAR↓	Perennial	None	
Carlson Field	Carlson 1	PFC	Perennial	Fenced	Exclosure. Limited use
<p>* As described in Prichard et al. 1999. PFC = proper functioning condition FAR↑ = functional-at-risk upward trend FAR↔ = functional-at-risk not apparent trend FAR↓ = functional-at-risk downward trend NF = nonfunctional</p>					

Pole Creek Allotment

A. Lotic Sites:

One mile (64 percent) of the lotic area also meets this objective, however the remaining 36 percent of the lotic riparian area is at risk (no apparent trend) or nonfunctional. Livestock impacts are identified as a causal factor for nonattainment of standards for these two lotic reaches.

B. Lentic Sites:

Two lentic areas assessed were rated in PFC, which meets this portion of the Standards and Guidelines. However, one lentic area was rated as NF, which does not meet this standard. Livestock impacts are identified as a causal factor for nonattainment of standards for lentic sites assessed in 1998.

Table 6. Lentic and lotic functionality assessments on the Pole Creek Allotment conducted in 1998 and 2004.

Riparian Area	Location	Approx. size	Functionality Rating*	
			1998	2004
Lentic				
MR-98-06, Spring #1	T39N R58E sec. 24	0.1 ac.	PFC	
MR-98-07, Spring #2	T39N R58E sec. 13	0.1 ac.	PFC	PFC
MR-98-08, (spring source of reservoir)	T40N R59E sec. 31	0.3 mi.	NF	
PC-04-02	T39N R58E sec. 12			PFC
Lotic				
MR-98-09, Pole Creek, Reach 3	T39N R58E sec. 12	0.33 mi.	NF	
MR-98-09, Pole Creek, Reach 4	T39N R58E sec. 12	1.0 mi.	PFC	
MR-98-09, Pole Creek, Reach 5	T39N R58E sec. 13	0.25 mi.	FAR↔	
* As described in Prichard et al. 1999. PFC = proper functioning condition FAR↑ = functional-at-risk upward trend FAR↔ = functional-at-risk not apparent trend FAR↓ = functional-at-risk downward trend NF = nonfunctional				

Water Quality: Classified waters – Monitoring in Hanks Creek and Conners Creek has revealed some exceedences of parameters for which water quality standards apply. These exceedences are not necessarily an indication of stream degradation, but may be characteristic of natural water quality at these locations. Water quality data should be used along with qualitative assessments to understand stream health.

Continuous water temperature data are available on lower Hanks Creek from 2002 to 2006 and for upper Hanks Creek in 2008. Water temperature in Hanks Creek exceeded Class B standards in 2002, 2003, and 2008 by being above 20° C for well over 10% of days in the year. Temperature was well within standards in 2004 and 2005, and barely within standards during 2006. Although temperatures of 20°C and 22°C were exceeded repeatedly in Hanks Creek, temperatures did not reach the LCT critical level of 26°C during the monitoring period. Daily maximum temperatures can be decreased by increasing stream cover, increasing size of the alluvial aquifer and establishing more pools. These improvements may already be affecting stream temperatures in lower Hanks Creek; however recent data are not available.

Water temperature in Conners Creek was not monitored continuously, but 60% of instantaneous samples were above 20°C. This is likely an indication that water temperatures are high in the stream and may not meet standards established by the State of Nevada for a cold water fishery.

In addition to exceedences of stream temperature standards, measurements on Conners Creek showed some exceedences of Total Phosphorus and fecal coliform. Higher than average values for these parameters could be attributed to grazing use; however there are not enough data to

make that conclusion. Levels of these parameters will likely decrease as riparian areas continue to improve along Conners Creek.

Unclassified waters - Springs and streams within this allotment meet the narrative definitions in NAC 445A.121 Standards applicable to all surface waters or the “Narrative Standards” (NDEP 2003). The Narrative Standards apply to pollution from domestic or industrial waste. Although waters rated as functional at risk or nonfunctional may have elevated levels of turbidity, suspended solids, water temperatures, and coliform and decreased levels of dissolved oxygen, this would not make them in violation of the Narrative Standards.

Standard 3. Habitat: Habitats exhibit a healthy, productive and diverse population of native and/or desirable plant species appropriate to the site characteristics to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

This standard has been partially met.

South Deeth Allotment

Upland Habitat. (Partially met, with some areas making significant progress towards meeting the standard).

Based on the Standard and Guideline Assessment completed for the Deeth Allotment in the 2003 Marys River Complex Allotment Evaluation it was determined that progress was being made towards meeting this standard, primarily in the uplands. Additional bitterbrush monitoring data was collected for two pastures (South Hanks and Conners Basin) in 2004.

Monitoring data collected on two areas in the Conners Basin Pasture showed 13.1 percent and 11.8 percent use. Bitterbrush utilization data collected in the South Hanks Pasture at one area showed 22 percent use. Recent data would not indicate that changing the determination made in the 2003 Marys River Complex Allotment Evaluation is warranted.

Riparian Habitat. (Partially met, with some areas making significant progress towards meeting the standard).

Although riparian areas comprise a relative small portion of the available habitat within the allotment, they provide a disproportionately higher habitat value for wildlife. Based on the Standards and Guidelines Assessment completed for the Deeth Allotment in the 2003 MRC Allotment Evaluation it was determined that the standard for riparian habitat (lentic/lotic) was not met and that livestock grazing is considered a significant causal factor for those riparian areas failing to make significant progress. Therefore, at that time, livestock grazing management was not in conformance with the guidelines for rangeland health.

Additional monitoring data was collected on lotic systems in 2004. While some areas showed considerable impacts from livestock use in 2004, two stations were rated as PFC and one as functional at risk with no apparent trend. Given this, it is determined that progress is being made toward meeting this standard.

Pole Creek Allotment **Upland Habitat (Undetermined)**

Because the Pole Creek Allotment was a category “C” allotment, specific objectives were not established through the Land Use Planning Process. Therefore no long term monitoring studies have been established for this allotment to determine progress for this standard. Not enough data is known to make a full determination. Ecological Status Inventory data in 1987 showed that approximately 44 percent of the Pole Creek Allotment was in late-seral condition with the remainder rated as mid-seral.

Riparian Habitat (partially met, with some areas making significant progress towards the standard)

Livestock grazing is considered a significant causal factor for those riparian areas failing to make significant progress, and therefore livestock grazing management is not in conformance with the guidelines for rangeland health. Summer use by cattle is the cause of poor functionality for some springs and reaches of Pole Creek. Cottonwood regeneration is also precluded because of cattle use.

Monitoring data presented in the 2003 MRC Allotment Evaluation for the Pole Creek Allotment determined that two lentic areas were rated at PFC with a third rated as non-functional. Additional lentic assessments were completed in 2004. The 2 springs assessed were both rated as PFC, however one had a PFC rating in 1998 and the other had no prior assessment with which to compare.

In 2007, Pole Creek Allotment was inspected and photographed. Despite some longer than normal use of the allotment by cattle, most areas showed only light to moderate impacts. Drier areas of the creek with intermittent flows were closely cropped and lacked green riparian vegetation which may have been a result of a dry period during late-summer. Little or no aspen and bitterbrush use was noted in an area that had burned in the 2001 fire. Additionally, uplands away from the creek showed moderate to light grazing while vegetation closer to the creek ranged from 4 to 14 inches in height. Heavy trampling was noted around a water site in a large meadow complex but vegetation was still only lightly used, except for some close grazing in the direct area of the meadow. Sedges and rushes were lightly used and provided dense cover. The stream channel showed no evidence of current-year trampling, and streambanks were not broken down. Light browsing was noted on young cottonwood trees less than 4 feet tall.

Burned Areas

A large percentage of the acres burned in South Deeth and Pole Creek Allotments provided summer/late brood rearing areas and winter habitat for sage grouse and “crucial” summer range for mule deer and antelope.

The South Deeth and Pole Creek Allotments provide sage grouse nesting, summer, and winter habitat. Approximately 46 percent of the nesting habitat, 65 percent of the winter habitat, and 63 percent of the summer/late brood rearing habitat has been impacted by fire from 2001-2006

(Map 9). Seven of nine active or historic leks were also impacted by fire. Habitat conditions on unburned acreage for sage grouse nesting/early brood rearing and winter habitat condition are estimated as good. Unburned late brood rearing/summer is estimated as fair. The predominant limiting factor for late brood rearing/summer habitat is less than optimal functionality ratings for lentic and lotic systems, however in 2007 and 2008 6.5 miles of lotic riparian areas burned in the Charleston Complex Fire that are normally exposed to cattle grazing were rated as PFC and 2.5 miles as functional at risk with an upward trend.

The South Deeth and Pole Creek Allotments provided approximately 117,938 acres of mule deer habitat. Approximately 43 percent of the intermediate mule deer habitat and 77 percent of the crucial summer habitat has been impacted by fire from 2001-2006. Major limiting factors include decreases in browse availability and decreases in available cover (Map 9). Although unburned islands exist, bitterbrush burned in the Charleston Complex fires exhibit low percentage of resprouting.

Habitat values in fire affected areas have been significantly impaired for mule deer and sage grouse in the short-mid term, (5-15 years), based on the loss of critical browse species and vertical structure.

Post-fire rehabilitation measures were implemented to assist in the recovery of wildlife habitat. Specific post-fire treatments within the South Deeth Allotment included approximately 6,000 acres of aerial seeding with a wildlife seed mix containing Wyoming sagebrush, basin big sagebrush, and bitterbrush. An additional 500 acres of bitterbrush were dribble seeded in Conners Basin. Habitat conditions for mule deer and sage grouse in these areas would be expected to improve over time as preferred browse species become reestablished and sagebrush canopy cover as well as vertical structure returns.

Overall, pockets within the fires as well as burned and unburned areas create a mosaic of habitats for a diverse number of wildlife species.

Standard 4. Cultural Resources Land use plans will recognize cultural resources within the context of multiple-use.

Met

Analysis of monitoring data indicates that this Standard has been met in the South Deeth and Pole Creek allotments.

Based on the information provided in the 2003 Draft AE and the supplemental information provided here, I have determined that not all of the standards for rangeland health are being met, and that significant progress is not being made towards meeting all of the standards for rangeland health. In addition, existing livestock grazing is not in conformance with all of the guidelines for the standards for rangeland health.

Bryan K. Fuell, Manager
Wells Field Office

Date

V. Possible changes in current livestock grazing management

Based on the determinations above, changes are necessary to ensure significant progress is being made towards meeting or to meet standards for rangeland health. Therefore, the BLM is soliciting comments from the permittee and the interested public, including agencies which have administrative responsibility for resources within the allotment, regarding livestock grazing management options. The proposals below include adjustments in the utilization objectives, changes in the active grazing privileges, and flexibility provided to the permittee to move livestock without specific authorization from the BLM. The BLM proposes using streambank trampling objectives, riparian utilization objectives, and riparian woody species utilization objectives as well as shorter seasons of use and rotation of pasture use to improve riparian conditions. The BLM also proposes including bitterbrush utilization objectives.

Results of Previous Public Scoping

Grazing management strategies were submitted during the comment period for the 2003 Marys River Complex Allotment Evaluation to the interested public. These strategies were not adopted in whole. Portions of these recommendations, however, have been incorporated into alternatives.

A. Purpose and Need

The purpose of and need for action is to renew the 10-year term grazing permit for the South Deeth and Pole Creek Allotments. Grazing regulations require that all term grazing permits be fully processed including an environmental analysis of existing grazing and any proposed changes to grazing management.

B. Actions Common to all but the No Action Alternative for the South Deeth Allotment.

Vacate the portions of the 1991 Agreement for Changes in Livestock Grazing Use on the Deeth and Stag Mountain Allotments as a Result of the Marys River Land Exchange that pertain to the Carlson Fields in the Deeth Allotment. The 1991 Agreement closed the Carlson Field #1 to livestock grazing until objectives were met. The grazing management decision to be issued for the South Deeth Allotment would replace the terms and conditions in the agreement applicable to the Carlson Field #1 and two additional Carlson Fields (#2 and #3) built since the agreement.

Vacate the 1991 Agreement amended in 1993 for Changes in Livestock Grazing Use on the Deeth and Stag Mountain Allotments as a Result of the Marys River Land Exchange (South Cross Field). The South Cross Field agreement allowed for the creation of the South Cross Field, an irrigated field on the lower Marys River. The agreement allowed for livestock grazing after August 10 annually, but was amended in 1993 to allow livestock grazing for 30 days following the last day of irrigation. The grazing management decision to be issued for the South Deeth Allotment would replace the terms and conditions in the agreement applicable to the South Cross Field.

The 1996/1997 Western Resources Management/Indian Creek Land Exchange was completed in three phases involving numerous allotments. The major impact that this land exchange had was related to the grazing privileges associated with the sheep permit on the Deeth and Pole Creek Allotments. As a result of these land exchanges, the exchange of use AUMs were authorized as

temporary nonrenewable use pending completion of the allotment evaluation and multiple use decision process to determine if these AUMs were authorized at the appropriate carrying capacity or available at all within these allotments. The grazing management decision to be issued for the South Deeth and Pole Creek Allotments would replace the existing terms and conditions in the agreement applicable to sheep AUMs.

C. Alternatives to be Considered for the South Deeth Allotment

1. No Action Alternative: Renew the livestock grazing permit with existing terms and conditions. No new range improvements would be constructed. The No Action Alternative would continue the existing grazing management strategy for the South Deeth Allotment without implementation of any proposed projects.

The South Deeth Allotment includes the low country of the Winter Creek, South and North Steer, and South Cross Field. It also includes the high country of the South and North Hanks, Conners Basin, and Carlson Fields #1, 2, and 3 (Map 2). The low country may be grazed with yearlings or cow/calf pairs. The grazing system for the high country is designed for use by yearlings and/or cow/calf pairs as requested by the permittee. Use by yearlings allows for more flexibility as they make better use of the terrain in the Hanks and Conners Basin Pastures and reduces livestock use on riparian areas. The season of use for the low country will start 4/20 and end 12/31. This season of use allows the permittee the flexibility to use the Winter Creek Pasture during the late fall/winter. The current permittee for South Deeth is Cross Ranch Grazing LLC. Authorized grazing is as follows:

Allotment Name	Pasture Name	Livestock Number	Livestock Kind	Period of Use	% Public Land	AUMs
Deeth	Winter Creek	242	Cattle	4/1 – 12/30	89	1940
Deeth	South Steer	225	Cattle	4/1 – 12/30	100	2027
Deeth	North Steer	138	Cattle	4/1 – 12/30	100	1243
Deeth	Conners Basin	370	Cattle	4/1 – 12/30	100	3333
Deeth	North Hanks	375	Cattle	4/1 – 12/30	100	3378
Deeth	South Hanks	259	Cattle	4/1 – 12/30	100	2333
Deeth	FFR	4	Cattle	3/1 – 2/28	100	12
Deeth	South Cross	355	Cattle	3/1 – 5/10	100	829
Deeth	South Cross	355	Cattle	8/10 – 2/28	100	2369

Sheep use in the Deeth Allotment is currently authorized as Temporary Non-Renewable to Eureka Livestock LLC under the 1996 agreement referenced above. Sheep use in the Deeth Allotment provides grazing and trailing to U.S. Forest Service administered lands in the spring and return in the fall to private pasture within the Pole Creek Allotment.

Under this alternative, BLM would continue to implement the existing grazing management strategies with the existing range improvements. However, the allotment evaluation analysis determined that the current grazing system was not achieving all of the Rangeland Health Standards.

2. No Grazing Alternative: Under this alternative, no grazing would be authorized in the South Deeth Allotment. The term grazing permit for this allotment would not be renewed.

Although riparian areas, streams, aspen, and uplands could be enhanced under a scenario of no livestock use, the BLM is required to authorize only those actions that conform to the RMP as approved in the Wells Record of Decision (ROD). The 1985 Wells RMP establishes, among other things, that the Deeth Allotment provides for livestock grazing use, and that livestock grazing use be managed so that resource management objectives will be achieved. The No Action Alternative does not meet the purpose and need to authorize grazing and does not meet the intent of the land use plan.

The 1985 Wells RMP and Rangeland Program Summary (RPS) established objectives for livestock grazing and provides for the establishment of a rangeland monitoring program to determine if management objectives are being met and to adjust grazing management systems and livestock numbers as required. Elimination of livestock grazing in lieu of making changes to the grazing systems and adjusting livestock numbers through monitoring is an action not in conformance with the RMP and RPS.

3. Alternative A: Renew the livestock grazing permit with modifications in the grazing system as outlined below.

This alternative proposes fencing the North Hanks Pasture into two separate pastures (North Hanks and Middle Hanks Pastures); it also recommends fencing Conners Basin Pasture into two separate pastures (North Conners and South Conners). The fences in Conners Basin are currently in place because of fire stabilization measures (2006 Charleston Complex Fire) and they would be made permanent under this alternative. The fenceline that would split North Hanks Pasture into two separate pastures is proposed as new construction with this alternative. These fences would allow a rest rotation system to be incorporated for the high country of the South Deeth Allotment and reduce hot season grazing to no more than two years out of every five years on Hanks Creek and Conners Basin with a shorter season of use during the hot season use period (30 days). Table 8 describes the grazing system (See Map 10 for location of the fences).

Either yearlings or cow/calf pairs could be run in the high country (North and South Conners Basin, North, Middle, and South Hanks and Carlson Fields). If cow/calf pairs are utilized in the high country pastures then the number of AUMs would be reduced. Sheep TNR use would be converted to active privileges and adjusted based on the proportion of current active use to revised grazing capacities.

The low country may be utilized by either cow/calf pairs or yearlings. Higher numbers of AUMs are available in the Winter Creek pastures for spring/summer than for fall/winter use. This alternative also proposes splitting the Steer pasture into three units (North Steer, Twin Buttes and South Steer), and the Winter Pasture into two pastures (North Winter and South Winter) to provide more flexibility and deferment into the system. The fence separating North Steer and South Steer and the fence separating Winter Creek Pasture are currently in place because of fire stabilization measures (2001 Isolation and 2006 Charleston Complex Fires) and would be made

permanent with this alternative. See Map 10 for location of the fences and proposed new pastures. Table 8 describes the grazing system.

Table 8. Alternative A grazing system for the South Deeth Allotment.

Pasture	AUMs by pasture	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
		2010	2011	2012	2013	2014	2015	2016
South Unit – Alternative 1								
Low Country								
North Winter Creek ³	913 Sp/Su/Fall or 456 Winter	4/20 – 5/31	9/1 – 2/28	8/1 – 8/31	6/1 – 6/30	Repeat Years 1-4		
South Winter Creek ³	1,030 Sp/Su or 515 Winter	9/1 – 2/28	8/1 – 8/31	7/1 – 7/31	4/20 – 5/31			
South Cross ¹	3,200	7/1 – 2/28	7/1 – 2/28	7/1 – 2/28	7/1 – 2/28			
South Steer	716	7/1 – 7/31	6/1 – 6/30	4/20 – 5/31	9/1 – 2/28			
Twin Buttes	1,074	6/1 – 6/30	4/20 – 5/31	9/1 – 2/28	8/1 – 8/31			
North Steer	1,097	8/1 – 8/31	7/1 – 7/31	6/1 – 6/30	7/1 – 7/31			
Total AUMS for Low Country		7,515 to 8,030	7,573 to 8,030	8,030	8,030			
High Country								
South Hanks	1,945 Yearlings 1,459 Cow/calf	5/1 – 5/31	6/1 – 6/30	7/1 – 7/31	8/1 – 8/31	REST	Repeat Years 1-5	
Middle Hanks	1,484 Yearling 1,113 Cow/calf	6/1 – 6/30	7/1 – 7/31	8/1 – 8/31	REST	5/1 – 5/31		
North Hanks	1,316 Yearling 987 Cow/calf	7/1 – 7/31	8/1 – 8/31	REST	5/1 – 5/31	6/1 – 6/30		
North Connors Basin	1,017 Yearlings 751 Cow/calf in Spring 883 Yearlings or 641 Cow/calf in Su/Fall	8/1 – 8/31	REST	5/1 – 5/31	6/1 – 6/30	7/1 – 7/31		
South Connors Basin	2,320 Yearlings 1,729 Cow/calf in Spring 2,023 Yearlings or 1,506 Cow/calf in Su/Fall	REST	5/1 – 5/31	6/1 – 6/30	7/1 – 7/31	8/1 – 8/31		

Pasture	AUMs by pasture	YEAR 1 2010	YEAR 2 2011	YEAR 3 2012	YEAR 4 2013	YEAR 5 2014	YEAR 6 2015	YEAR 7 2016
North/South Connors Basin	92 sheep	4/1-10/31	4/1-10/31	4/1-10/31	4/1-10/31	4/1-10/31		
Carlson Field 1 ²	(75) ²	5/1 – 9/15	5/1 – 9/15	REST	5/1 – 9/15	5/1 – 9/15		
Carlson Field 2 ²	(75) ²	5/1 – 9/15	REST	5/1 – 9/15	5/1 – 9/15	REST		
Carlson Field 3 ²	(75) ²	REST	5/1 – 9/15	5/1 – 9/15	REST	5/1 – 9/15		
FFR	12	4/20 – 2/28	4/20 – 2/28	4/20 – 2/28	4/20 – 2/28	4/20 – 2/28		
Total AUMs for High Country		5,732 Yearlings or 4,304 Cow/calf, plus 92 sheep	7,169 Yearlings or 5,392 Cow/calf Plus 92 sheep	6,916 Yearlings or 5,202 Cow/calf plus 92 sheep	6,451 Yearlings or 4,853 Cow/calf plus 92 sheep	5,614 Yearlings or 4,397 Cow/calf plus 92 sheep		

¹The South Cross Field may be grazed beginning 30 days after the last day of irrigation and before 2/28 of the following year. The actual turnout date may vary annually but has generally been around 7/1. The permittee will be responsible for irrigation to ensure forage is available. Forage conditions may vary on an annual basis based on weather and water conditions; therefore, use of this field will be adjusted accordingly to ensure use does not exceed utilization objectives.

²The Carlson Fields are comprised of three fields: 1(upper), 2 (middle) and 3 (lower). Use will be rotated between two fields, with one being rested annually. Use in each of these fields will not exceed 75 AUMs per field. Use may be adjusted (up or down), based on monitoring results. These fields will be used for gathering purposes only. The period of use in each field will not exceed a total of 5 days and no more than 200 head of yearlings will be held overnight at one time. (For example, if 1000 head are gathered in one day, only 200 will be allowed to stay overnight). Authorization for use will take into consideration weather, forage, and water conditions.

³While monitoring data are showing an increase in stocking rate for Winter Creek is warranted, it is recommended that use be maintained at current levels. However, TNR use may be applied for in this pasture on an annual basis. This use may be authorized without further analysis provided utilization objectives would not be exceeded.

Flexibility – The flexibility for grazing use associated with the three Carlson Fields and the South Cross Field are described above. The flexibility associated with the remaining pastures is described as follows:

- 1) The permittee has the flexibility to move his livestock between pastures scheduled for use beginning 5 days before the end of the use period in the current use pasture through the first 5 days of the use period for the next pasture scheduled for use. This flexibility is also provided to the permittee to move cattle from a pasture scheduled for use back to private land pastures.
- 2) The permittee also has the flexibility to trail his livestock through pastures scheduled for rest or during times outside scheduled use periods only when essential to reach pastures scheduled for use. No overnight stops in closed or rested pastures will be allowed on such trail movements.

Table 9 shows proposed range improvement projects for the South Deeth Allotment necessary to implement Alternative A. Temporary fire fences for Winter Creek, South Hanks and Connors

Basin Pastures are being analyzed as permanent fences to provide additional livestock management options.

Table 9. Proposed Range Improvements for Alternative A.

Project Name/Description	
Winter Creek Pasture Fence	Maintain approx. 7 miles of temporary fire stabilization fence as permanent fencing for livestock management.
Connors Basin Pasture Fence	Maintain approx. 3.5 miles of temporary fire stabilization fence as permanent fencing for livestock management.
South Hanks Pasture Fence (divides Middle and South Hanks)	Maintain approx. 5 miles of temporary fire stabilization fence as permanent fencing for livestock management.
South Steer Pasture Fence (divides North and South Steer)	Maintain approx. 6 miles of temporary fire stabilization fence as permanent fencing for livestock management.
North Hanks Pasture Fence (divides North and Middle Hanks)	Construct approximately 4 miles of fence to split the North Hanks Pasture into North and Middle Hanks Pastures.
Twin Buttes Pasture Fence (divides South Steer and Twin Buttes)	Construct approximately 2.5 miles of fence to split the South Steer Pasture into South Steer and Twin Buttes Pastures
North Steer Pasture Spring Development	Complete a spring development which includes an enclosure and pipeline in the North Steer Pasture of the Deeth Allotment.
Hidden /Salt Block Wells	Evaluate Hidden and Salt Block Well to determine if it is feasible to return them to functionality.
Pebble Bowl and East/West Hanks Creek Enclosures	Determine if water flows have increased and if spring developments can be completed

4. Alternative B: Renew the livestock grazing permit with modifications in the grazing system as outlined below.

The low country would have a four pasture deferred rotation system, with South Steer and Winter Creek remaining as single pastures. The low country may be utilized by either cow/calves or yearlings. Higher numbers of AUMs are available in the Winter Creek Pasture for spring/summer than for fall/winter use. The grazing system is described below in Table 10 (Map 11).

Either yearlings or cow/calf pairs could be run in the high country. If cow/calf pairs are utilized then number of AUMs would be reduced. Sheep TNR use would be converted to active privileges and adjusted based on the proportion of current active use to revised grazing capacities. This alternative proposes the same grazing system as Alternative A for the high country.

Table 10. Proposed grazing system for the South Deeth Unit. (Alternative B)

Pasture	AUMs by pasture	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
		2010	2011	2012	2013	2014	2015	2016
South Unit Alternative 2								
Low Country								
Winter Creek ³	971 Winter to 1,943 Spr/Su/Fall	4/20 – 5/31 10/1 – 2/28	7/1 – 7/31 10/1 – 2/28	6/1 – 6/30 10/1-2/28	4/20 – 5/31 10/1 – 2/28	Repeat Years1-4		
South Cross ¹	3,200	7/1 – 2/28	7/1 – 2/28	7/1 – 2/28	7/1 – 2/28			
South Steer	1,790	6/1 – 6/30	4/20 – 5/31	7/1 – 7//31	6/1 – 6/30			
North Steer	1,097	6/1 – 6/30	4/20 – 5/31	7/1 – 7/31	6/1 – 6/30			
Total AUMS for Low Country		7,058 to 8,030	7,058 to 8,030	7,058 to 8,030	7,058 to 8,030			
High Country								
South Hanks	1,945 Yearlings 1,459 Cow/calf	5/1 – 5/31	6/1 – 6/30	7/1 – 7/31	8/1 – 8/31	REST	Repeat Years 1-5	
Middle Hanks	1,484 Yearling 1,113 Cow/calf	6/1 – 6/30	7/1 – 7/31	8/1 – 8/31	REST	5/1 – 5/31		
North Hanks	1,316 Yearling 987 Cow/calf	7/1 – 7/31	8/1 – 8/31	REST	5/1 – 5/31	6/1 – 6/30		
North Conners Basin	1,017 Yearlings 751 Cow/calf in Spring 883 Yearlings or 641 Cow/calf in Su/Fall	8/1 – 8/31	REST	5/1 – 5/31	6/1 – 6/30	7/1 – 7/31		
South Conners Basin	2,320 Yearlings 1,729 Cow/calf in Spring 2,023 Yearlings or 1,506 Cow/calf in Su/Fall	REST	5/1 – 5/31	6/1 – 6/30	7/1 – 7/31	8/1 – 8/31		
North/South Conners Basin	92 sheep	4/1-10/31	4/1-10/31	4/1-10/31	4/1-10/31	4/1-10/31		

Pasture	AUMs by pasture	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
		2010	2011	2012	2013	2014	2015	2016
Carlson Field 1 ²	(75) ²	5/1 – 9/15	5/1 – 9/15	REST	5/1 – 9/15	5/1 – 9/15		
Carlson Field 2 ²	(75) ²	5/1 – 9/15	REST	5/1 – 9/15	5/1 – 9/15	REST		
Carlson Field 3 ²	(75) ²	REST	5/1 – 9/15	5/1 – 9/15	REST	5/1 – 9/15		
FFR	12	4/20 – 2/28	4/20 – 2/28	4/20 – 2/28	4/20 – 2/28	4/20 – 2/28		
Total AUMs for High Country		5,732 Yearlings or 4,304 Cow/calf, plus 92 sheep	7,169 Yearlings or 5,392 Cow/calf Plus 92 sheep	6,916 Yearlings or 5,202 Cow/calf plus 92 sheep	6,451 Yearlings or 4,853 Cow/calf plus 92 sheep	5,614 Yearlings or 4,397 Cow/calf plus 92 sheep		

¹The South Cross Field may be grazed beginning 30 days after the last day of irrigation and before 2/28 of the following year. The actual turnout date may vary annually but has generally been around 7/1. The permittee will be responsible for irrigation to ensure forage is available. Forage conditions may vary on an annual basis based on weather and water conditions; therefore, use of this field will be adjusted accordingly to ensure use does not exceed utilization objectives.

²The Carlson Fields are comprised of three fields: 1(upper), 2 (middle) and 3 (lower). Use will be rotated between two fields, with one being rested annually. Use in each of these fields will not exceed 75 AUMs per field. Use may be adjusted (up or down), based on monitoring results. These fields will be used for gathering purposes only. The period of use in each field will not exceed a total of 5 days and no more than 200 head of yearlings will be held overnight at one time. (For example, if 1000 head are gathered in one day, only 200 will be allowed to stay overnight). Authorization for use will take into consideration weather, forage, and water conditions.

³While monitoring data are showing an increase in stocking rate for Winter Creek is warranted, it is recommended that use be maintained at current levels. However, TNR use may be applied for in this pasture on an annual basis. This use may be authorized without further analysis provided utilization objectives would not be exceeded.

Flexibility – The flexibility for grazing use associated with the three Carlson Fields and the South Cross Field are described above. The flexibility associated with the remaining pastures is described as follows:

- 1) The permittee has the flexibility to move his livestock between pastures scheduled for use beginning 5 days before the end of the use period in the current use pasture through the first 5 days of the use period for the next pasture scheduled for use. This flexibility is also provided to the permittee to move cattle from a pasture scheduled for use back to private land pastures.
- 2) The permittee also has the flexibility to trail his livestock through pastures scheduled for rest or during times outside scheduled use periods only when essential to reach pastures scheduled for use. No overnight stops in closed or rested pastures will be allowed on such trail movements.

Table 11 (Map 11) shows proposed range improvement projects for the South Deeth Allotment necessary to implement Alternative B. Temporary fire fences for South Hanks and Conners Basin Pastures are being analyzed as permanent fences to provide additional livestock management options.

Table 11. Proposed Range Improvements for Alternative B.

Project Name/Description	
Conners Basin Pasture Fence	Maintain approx. 3.5 miles of temporary fire stabilization fence as permanent fencing for livestock management.
South Hanks Pasture Fence (divides Middle and South Hanks)	Maintain approx. 5 miles of temporary fire stabilization fence as permanent fencing for livestock management.
South Steer Pasture Fence (divides North and South Steer)	Maintain approx. 6 miles of temporary fire stabilization fence as permanent fencing for livestock management.
North Hanks Pasture Fence (divides North and Middle Hanks)	Construct approximately 4 miles of fence to split the North Hanks Pasture into North and Middle Hanks Pastures.
North Steer Pasture Spring Development	Complete a spring development which includes an enclosure and pipeline in the North Steer Pasture of the Deeth Allotment.
Hidden /Salt Block Wells	Evaluate Hidden and Salt Block Well to determine if it is feasible to return them to functionality.
Bowl and East/West Hanks Creek Enclosures	Determine if water flows have increased and if spring developments can be completed

D. Alternatives to be Considered for the Pole Creek Allotment

1. No Action Alternative: Renew livestock grazing permit with existing terms and conditions. No new range improvements would be constructed.

The current season of use for cattle and sheep is 4/1 – 10/31. The authorized use is 561 cattle AUMs and 37 sheep AUMs. An additional 192 AUMs of TNR sheep use has been available on a yearly basis for use within the Pole Creek Allotment.

Under this alternative, BLM would continue to implement the existing grazing management strategies with the existing range improvements. However, the allotment evaluation analysis determined that the current grazing system was not achieving some of the Rangeland Health Standards or making significant progress toward some of the allotment specific objectives. Therefore, The No Action Alternative is not considered a viable option for selection, but does provide a baseline condition to which the other alternatives may be compared.

2. No Grazing Alternative: Under this alternative, no grazing would be authorized in the Pole Creek Allotment. The term grazing permit for these allotments would not be renewed.

Although riparian areas, streams, aspen, and uplands would be enhanced under a scenario of no livestock use, the BLM is required to authorize only those actions that conform to the RMP as approved in the Wells Record of Decision (ROD). The 1985 Wells RMP establishes, among other things, that the Pole Creek Allotment provides for livestock grazing use, and that livestock grazing use be managed so that resource management objectives will be achieved. The No Action Alternative does not meet the purpose and need to authorize grazing and does not meet the intent of the land use plan.

The 1985 Wells RMP and Rangeland Program Summary (RPS) established objectives for livestock grazing and provides for the establishment of a rangeland monitoring program to determine if management objectives are being met and to adjust grazing management systems and livestock numbers as required. Elimination of livestock grazing in lieu of making changes to the grazing systems and adjusting livestock numbers through monitoring is an action not in conformance with the RMP and RPS.

3. Alternative A:

The authorized use is 561 cattle AUMs. Use could be made from 5/1 – 6/15 or 10/1 – 11/15 or both.

192 AUMs of TNR sheep use has been available on a yearly basis on the Pole Creek Allotment. These TNR AUMs would be converted to active preference. Total authorized active sheep use would be 229 AUMs. Authorized use would be as outlined below:

Allotment Name	Livestock Number	Livestock Kind	Period of Use	% Public Land	AUMs
Pole Creek	228	Sheep	5/1 – 9/30	100	229

4. Alternative B:

Under this alternative no cattle use would be authorized on the Pole Creek Allotment.

192 AUMs of TNR sheep use has been available on a yearly basis on the Pole Creek Allotment. These TNR AUMs would be converted to active preference. Total authorized active sheep use would be 229 AUMs. Authorized use would be as outlined below:

Allotment Name	Livestock Number	Livestock Kind	Period of Use	% Public Land	AUMs
Pole Creek	228	Sheep	5/1 – 9/30	100	229

5. Alternative C:

The authorized use is 561 cattle AUMs. Use could be made from 5/1 – 6/15 or 10/1 – 11/15 or both.

192 AUMs of TNR sheep use has been available on a yearly basis on the Pole Creek Allotment. These TNR AUMs would not be converted to active preference. Total authorized active sheep use would remain at 37 AUMs. Authorized use would be as outlined below:

Allotment Name	Livestock Number	Livestock Kind	Period of Use	% Public Land	AUMs
Pole Creek	37	Sheep	5/1 – 9/30	100	37

D. Standard Terms and Conditions Common to All Grazing Permits

1. Actual use data on all pastures must be submitted to this office within 15 days from the last day of use.

2. Supplemental feeding is limited to salt, mineral, and/or protein supplements in block, granular or liquid form. Such supplements must be placed at least ¼ mile from live water (springs, streams), troughs, wet or dry meadows, and aspen stands.
3. All riparian exclosures, including spring development exclosures, are closed to livestock use unless specifically authorized in writing by the authorized officer.
4. Pursuant to 43 CFR 10.4(g), the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer.
5. The terms and conditions of your permit may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.

E. Proposed additions and changes to RPS and allotment specific objectives.

Riparian Objectives to be added to terms and conditions.

Maximum allowable use of herbaceous and woody riparian vegetation will not exceed 35 percent utilization.

Livestock streambank alteration (bank trampling and sheering) will not exceed 20 percent (percentages are based on an average measurement from all stations for each stream).

Long-term objectives are for the streams in the two allotments to be in proper functioning condition with a riparian condition rating in good to excellent condition [percent of optimum of 65% or higher].

RPS objectives in Appendix 1 were updated to reflect new proposed riparian condition objectives and both short-term and long-term dates to be achieved.

If these utilization standards are exceeded the following year the pasture will be rested or have cool season use.

Upland Utilization Objectives

Key Grass Species - 50% of current year's growth.

Bitterbrush - 25% of current year's growth at the end of the spring use period (mid-July), and 45% of current year's growth by the end of the summer/fall use period.

Key Area Objectives

Maintain use levels, maintain or improve ecological status, and maintain or achieve statistically significant increases in key species as listed below.

Allotment specific objectives in Appendix 1 were updated to reflect new proposed upland utilization objectives. New dates for long-term objectives were established for Ecological Status and Percent Frequency by Occurrence. The specific ecological status and percent frequency for the Winter Creek Key Area has been changed from improve to maintain or increase in recognition of the improved condition at the Key Area.

Key Area	Key Species ¹	Maintain use levels at or below (%):	Ecological Status (1987)	Ecological Status (1995)	Ecological Status by 2020:	% Frequency of Occurrence by 2020:
DE-01 Winter Creek	STTH2	50	Mid Seral	Late Seral	Maintain in Late Seral	Maintain or increase the frequency of occurrence of key species.
	ORWE	50				
DE-02 South Hanks	STTH2	50	Mid Seral	Mid Seral	Late Seral	Achieve statistically significant increase in key species.
	PONE3	50				
DE-03 North Hanks	AGSP	50	Late Seral (50 points)	Late Seral (60 points or higher)	Late Seral (60 points or higher)	Achieve statistically significant increase in key species.
	FEID	50				
	PUTR2	25 SP 45 SU/Fall				
DE-05 Steer	STTH2	50	Mid Seral	Mid Seral	Late Seral	Achieve statistically significant increase in key species.
¹ STTH2 – Thurber needlegrass ORWE – Webber needlegrass PONE3 – Nevada bluegrass AGSP – Bluebunch wheatgrass FEID – Idaho fescue PUTR2 – Bitterbrush						

VI. Literature

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Appendix 1
MARYS RIVER COMPLEX ALLOTMENT EVALUATION
MULTIPLE USE OBJECTIVES

STANDARDS FOR RANGELAND HEALTH FOR THE NORTHEASTERN GREAT BASIN AREA OF NEVADA (1997)

1. Upland Sites:

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

2. Riparian and Wetland Sites:

Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

3. Habitat:

Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

4. Cultural Resources:

Land use plans will recognize cultural resources within the context of multiple use.

GENERAL LAND USE PLAN (LUP) OBJECTIVES (1985)

Livestock Grazing:

To provide for livestock grazing consistent with other resource uses.

Terrestrial Wildlife Habitat:

1. To conserve and/or enhance wildlife habitat to the maximum extent possible.
2. Eliminate all of the fencing hazards in crucial big game habitat, most of the fencing hazards in non-crucial big game habitat.
3. Eliminate all of the high and medium priority terrestrial riparian habitat conflicts in coordination with other resource uses.
4. Manage public lands in the Wells Resource Area on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private and public land resources.

Riparian/Stream Habitat:

1. Improve high and medium priority riparian/stream habitat to at least good condition. (Techniques resulting in a minimum improvement of 30% in habitat condition over the short-term (within seven years) would be used.)

2. Prevent undue degradation of all riparian/stream habitat due to other uses.

RANGELAND PROGRAM SUMMARY (RPS) OBJECTIVES

Deeth Allotment

Range

1. Improve livestock distribution in Hanks Creek Basin, Stud Creek and Chimney Creek areas.
2. Improve ecological status in Winter Creek and Steer Pastures and maintain ecological status in Chimney Creek, Stud Creek, Hanks Creek Basin, and Conners Creek Basin.
3. Develop an AMP to be signed in FY87.

Wildlife

1. Improve or maintain all seasonal big game habitat in the Deeth Allotment to good or excellent condition to provide forage and habitat capable of supporting the following reasonable numbers:

Wildlife Species	Existing Use (AUM's)	Target (AUM's)
Mule deer	1,443	2,733
Antelope	114	114
Bighorn sheep	0	3
Elk	0	*
*The target for elk numbers in the Jarbidge Mountains, as per the Wells Resource Management Plan Elk Amendment, is 220, but no allotment-specific objectives have been set.		

2. Facilitate big game movements by modifying 41 miles of existing fences to Bureau standards.
3. Improve, enhance, or develop 25 springs in the Deeth Allotment to good or excellent condition.
4. Reestablish bighorn sheep into the Jarbidge Mountains.
5. Reestablish elk into the Jarbidge Mountains.

Riparian

1. Improve 18.3 miles of riparian/stream habitat to good or better condition on Chimney Creek, Conners Creek, Hanks Creek, and Marys River.
2. Hanks Creek:
3. Achieve up to 35% utilization of herbaceous riparian vegetation by livestock during years of use.

4. Improve 8.6 miles of riparian/aquatic habitat to good by 2010.
5. Improve 8.6 miles of riparian/aquatic habitat to good or excellent condition by 2015.

Pole Creek Allotment

Range

1. Provide forage to sustain 1,233 AUMs for livestock grazing.
2. Manage livestock to maintain present ecological status and trend.
3. Maintain Pole Creek as a moving lane pasture for the Deeth AMP.

Wildlife

1. Improve or maintain all seasonal big game habitat in the Pole Creek Allotment to good or excellent condition to provide forage and habitat capable of supporting the following reasonable numbers:

Wildlife Species	Existing Use (AUM's)	Target (AUM's)
Mule deer	25	49
Antelope	0	0
Bighorn sheep	0	0
Elk	0	*
*The target for elk numbers in the Jarbidge Mountains, as per the Wells Resource Management Plan Elk Amendment, is 220, but no allotment-specific objectives have been set.		

2. Facilitate big game movements by modifying 1 mile of existing fences to Bureau standards.
- b. Improve 1.8 miles of riparian/aquatic habitat from 40.0% to 52.0% of habitat optimum by 1992.
 - c. Improve 1.8 miles of riparian/aquatic habitat to good by 2015.
 - d. Improve 1.8 miles of riparian/aquatic habitat to good or excellent condition by 2010.

ALLOTMENT SPECIFIC OBJECTIVES

Deeth Allotment Utilization Objectives

Riparian Objectives

Maximum allowable use of herbaceous and woody riparian vegetation will not exceed 35 percent utilization.

Livestock streambank alteration (bank trampling and sheering) will not exceed 20 percent (percentages are based on an average measurement from all stations for each stream). Long-term objectives are for the streams in the two allotments to be in proper functioning condition with a riparian condition rating of good to excellent condition [percent of optimum of 65% or higher].

Upland Utilization Objectives

Key Grass Species - 50% of current year's growth.

Bitterbrush - 25% of current year's growth at the end of the spring use period (mid-July), and 45% of current year's growth by the end of the summer/fall use period.

Key Area Objectives

Maintain use levels, maintain or improve ecological status, and maintain or achieve statistically significant increases in key species as listed below:

Key Area	Key Species¹	Maintain use levels at or below (%):	Ecological Status (1987)	Ecological Status by 2020:	% Frequency of Occurrence by 2020:
DE-01 Winter Creek	STTH2	50	Mid Seral	Maintain in Late Seral	Maintain or increase the frequency of occurrence of key species.
	ORWE	50			
DE-02 South Hanks	STTH2	50	Mid Seral	Late Seral	Achieve statistically significant increase in key species.
	PONE3	50			
DE-03 North Hanks	AGSP	50	Late Seral (50 points)	Late Seral (60 points or higher)	Achieve statistically significant increase in key species.
	FEID	50			
	PUTR2	25 SP 45 SU/Fall			
DE-04	AGSP		Maintain or improve ecological status by 2005.		Maintain or increase the frequency of occurrence of key species.
	FEID				
DE-05 Steer	STTH2	50	Mid Seral	Late Seral	Achieve statistically significant increase in key species.

¹STTH2 – Thurber needlegrass
ORWE – Webber needlegrass
PONE3 – Nevada bluegrass
AGSP – Bluebunch wheatgrass
FEID – Idaho fescue
PUTR2 – Bitterbrush

Pole Creek Allotment

Utilization Objectives

Riparian Objectives

Maximum allowable use of herbaceous and woody riparian vegetation will not exceed 35 percent utilization.

Livestock streambank alteration (bank trampling and sheering) will not exceed 20 percent (percentages are based on an average measurement from all stations for each stream).

Long-term objectives are for the streams in the two allotments to be in proper functioning condition with a riparian condition in good to excellent condition and a RPI percent of optimum of 65% or higher

Upland Objectives

Key Grass Species - 50% of current year's growth.

Bitterbrush - 25% of current year's growth at the end of the spring use period (mid-July), and 45% of current year's growth by the end of the summer/fall use period.

Appendix 2

Riparian/Stream Habitat Survey Data

1. Stream Survey Data Summary

The stream survey protocol followed by the Elko BLM (derived from BLM Manuals 6671 and 6740 as refined in the Aquatic Habitat Inventory and Monitoring Level III Survey Procedures-Transect Method, Elko Revised Handbook 6720-1, 2002)) divides each stream into stations at one stream-mile intervals, beginning (usually) at the confluence with the next major stream. Each station has five transects with 100-foot spacing where stream attributes are measured or assessed. Bank cover and bank stability are averaged to yield the riparian condition index (RCI). An index of 100% is considered optimum and is represented by banks that are well vegetated with tall shrubs and/or trees and totally stable. Bank cover and bank stability are based on a 100-foot section of each bank with the transect as the midpoint. The scores of each transect are summed for each station and divided by the total possible score to give a percent optimum.

Stream habitat condition index (HCI) averages pool-riffle ratio (percent optimum), pool quality (percent optimum), percent stream bottom with desirable material, bank cover (percent optimum), and bank stability (percent optimum) (USDI BLM 2002). A HCI of 100% of optimum is represented by stream-bottom substrates of gravel or rubble, quality pools (deep and with cover), a pool-riffle ratio of 1:1, and stable well-vegetated streambanks

Pool quality is based on the percent of stream width in quality pools. Quality pools are those that have depths of at least 1 foot, are as wide or as long as the average stream width, and have some cover including vegetation, undercut banks, or depths in excess of 2 feet (BLM, 2002). Pool quality is an important attribute since quality pools are a limiting factor for native salmonids of the interior west (e.g. Platts et al. 1983 and 1987). The value used for stream survey summaries is the total width of quality pools (based on points assigned for cover, depth, and length or width) divided by total stream width in pools of any quality.

Water width-depth ratio was suggested by Overton et al. (1994) to be used as an indicator for assessing condition in their study streams. This ratio is derived from the water width divided by the average water depth. This ratio, unlike bankfull width-depth ratio, depends on discharge at the time of survey. However, it should relatively indicate channel conditions over time. In some situations, water width-depth ratio can be very close to bankfull width-depth ratio.

Deeth Allotment

Stream survey was conducted on Conners Creek, Hanks Creek, and NF Hanks Creek between 1977 and 2004. Habitat conditions showed varying degrees of improvement among streams (Table 1). Stream survey data for instream habitat condition in the Deeth Allotment showed improvement into a higher condition class for Hanks Creek and a degradation of condition class for the whole of Conners Creek ("good" to "fair"). Slight fluctuation in ratings could be due to the amount of water present at the time of the surveys.

Table 1. Habitat condition¹ (percent optimum) recorded for streams in the Deeth Allotment between 1977 and 2002.

Stream	1979	1987	1990	1993	1997
Conners Creek	61.3	34.4	38.6	29.9	54.8
S-01 ²	no data	no data	dry	dry	46.1
S-03, S-04 ²	no data	30.99	26.4	24.5	41.4
S-02, S-05 through S-09 ²	61.3	36.2	45.5	34.6	60.4
Hanks Creek	40.2	46.1	no data	44.8	56.0
¹ Based on bank cover and stability, desired streambottom materials, quality pools, and pool:riffle ratio, where 100% is optimum and is represented by totally stable, well vegetated banks with tall shrubs and/or trees, stream bottom substrates of gravels, cobbles, bedrock and boulders, quality pools and pool:riffle ratio of 1:1. Condition ratings are: <50% = poor, 50-59% = fair, 60-69% = good, ≥ 70% = excellent (Duff and Cooper 1976). ² Conners S-01 is within the Hanks Creek Pasture, S-03 and S-04 are within the Carlson Field #1 Exclosure (not grazed), and S-02 and S-05 through S-09 are within the Conners Basin Pasture					

By contrast, riparian conditions showed improvement on Conners Creek, and Hanks Creek up to three condition classes (Conners Creek S-03 and S-04 1987 data and Hanks Creek) (Table 2). Slight fluctuation in ratings could be due to the amount of water present at the time of the surveys.

Table 2. Riparian condition¹ (percent optimum) recorded for streams in the Deeth Allotment between 1977 and 2002.

Stream	1979	1987	1990	1993	1997
Conners Creek	66	34.4	43.9	49.3	68.9
S-01 ²	no data	no data	29.7	46.3	46.3
S-03, S-04 ²	no data	30.5	32.0	45.6	75
S-02, S-05 through S-09 ²	66	36.3	54.1	51.4	75.28
Hanks Creek	46.5	49.8	no data	57.1	71.9
NF Hanks Creek ³	no data	no data	no data	61.9	75 ⁴
¹ Optimum is considered to be represented by nearly totally stable streambanks, well vegetated with tall shrubs and/or trees. Condition classes are: 25-49% = poor, 50-59% = fair, 60-69% = good, and 70-100% = excellent (Duff and Cooper 1976). ² Conners S-01 is within the Hanks Creek Pasture, S-03 and S-04 are within the Carlson Field #1 Exclosure (not grazed), and S-02 and S-05 through S-09 are within the Conners Basin Pasture. ³ NF Hanks Creek is in the Carlson Field Exclosure #1, and is not grazed.					

Pole Creek Allotment

No stream survey was completed for the Pole Creek Allotment.

2. Rosgen Channel Types

Deeth Allotment

Rosgen channel type data were collected for Conners and Hanks Creeks in conjunction with the most recent stream surveys. A variety of Rosgen channel types were recorded for the streams on the Deeth Allotment. The B and E channels are relatively stable whereas the A, C, and F are susceptible to disturbance. The data represented in Table 3 generally indicates that Conners Creek is somewhat stable whereas Hanks Creek has both stable and transitional channel segments.

Table3. Rosgen (1996) Channel type data collected for streams in 1997 or 2002.

Stream	Survey Station	Rosgen Channel Type
Conners Creek	S-01	B4
Conners Creek	S-02	B4c
Conners Creek	S-03	E6
Conners Creek	S-04	F4
Conners Creek	S-05	A4
Conners Creek	S-06	C4b
Conners Creek	S-07	B3a
Conners Creek	S-08	B4a
Conners Creek	S-09	B4a
Hanks Creek	S-07	B4c
Hanks Creek	S-08	B4c
Hanks Creek	S-09	E4
Hanks Creek	S-10	B4c
Hanks Creek	S-11	C4
Hanks Creek	S-12	C5
Hanks Creek	S-13	B4c
Hanks Creek	S-14	C4
Hanks Creek	S-15	E5
Hanks Creek	S-16	G5
Hanks Creek	S-17	C5
Hanks Creek	SA-1	C4b
Hanks Creek	SB-1	E6

Pole Creek Allotment

No stream classification was completed for Pole Creek.

3. Proper Functioning Condition

A riparian functionality assessment is a method for assessing structure and function of lotic (running water) and lentic (standing water) riparian-wetland areas (Prichard et al. 1993, 1994, 1998, 1999). This methodology takes an interdisciplinary approach for making a qualitative assessment based on quantitative science (Prichard et al. 1998), examining hydrologic, vegetative, and soil/landform erosion attributes. PFC assessment is a simple tool to evaluate physical attributes of any perennial or intermittent riparian area regardless of the special interest needs (i.e. fish habitat, aesthetics, livestock accessibility to water, etc.).

Functionality assessments result in a qualitative rating based on potential as understood by the interdisciplinary team. Prichard et al. (1998) defined PFC for lotic areas as follows:

“A riparian-wetland area is considered to be in proper functioning condition when adequate vegetation, landform, or woody debris is present to: dissipate stream energy associated with high waterflow, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water

recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; support greater biodiversity.”

The lentic riparian areas within the complex were assessed for riparian condition using the interdisciplinary approach discussed for lotic areas (PFC). Prichard et al. (1999) defined PFC for lentic riparian areas as:

“Lentic riparian-wetland areas are functioning properly when adequate vegetation, landform, or debris is present to: dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby reducing erosion and improving water quality; filter sediment and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize islands and shoreline features against cutting action; restrict water percolation; develop diverse ponding characteristics *to provide* the habitat and the water depth, duration, and temperature necessary for fish production, waterbird breeding, and other uses; and support greater biodiversity.”

The riparian functionality assessment results in the following ratings: proper functioning condition (PFC); functional-at-risk (FAR) and nonfunctional (NF). A reach designated as FAR is in functioning condition, however one or more attributes puts it at risk of degradation and becoming NF. A rating of FAR is used with a description of the trend of the reach (upward, downward, static, or not-apparent). A NF reach or complex does not fit the definition of PFC nor FAR.

Deeth Allotment

Lotic

In 1997, 1998, and 2002 PFC assessments were conducted on nearly 25 miles of lotic riparian areas on the Deeth Allotment. Ratings varied from nonfunctional to PFC depending on location and management activity. Livestock impacts, such as hoof shear, bank trampling, and heavily grazed willows, were cited a number of times with respect to reaches at risk. Lack of or limited amounts of riparian vegetation, increasing amounts of thistle and encroachment of upland species on riparian areas are also listed as concerns for the various reaches in the allotment. In some instances, headcuts were identified as areas of concern. Table 4 describes lotic functionality ratings by pasture for the allotment.

Table 4. Lotic (running water) riparian functionality assessments completed for the South Deeth Allotment by pasture in 1997, 1998, and/or 2002.

Pasture	Stream	Reach	Rating ¹	Approx. size
Conners Basin	Conners Creek	4-7	FAR-up ³	4.0 mi.
		8	NF ² , FAR-na ³	0.85 mi.
		9	FAR-static ²	0.5 mi.
	Beaver pond channel	1 (MR-98-15)	FAR-up	0.25 mi.
		2 (MR-98-16)	PFC	0.1 mi.
Steer Pasture	Willow Tree Spring Creek	1 (MR-98-05)	FAR-down	0.25 mi.
	Hot Springs Creek	1 (MR-98-34)	FAR-down	0.25 mi.
		2 (MR-98-35)	FAR-up	0.5 mi.
Hanks Creek Basin	Conners Creek	1 (S-01)	FAR-na ²	0.8 mi
		2	FAR-down ²	0.3 mi.
		3 (S-02)	NF ²	0.4 mi.
	Hanks Creek	SA, 4 (SA-1, S-07, S-08)	PFC	2.67 mi.
		S-09	FAR-up	0.75 mi.
		5 (S-10 through S-14)	FAR-down	4 mi.
		SB-1, S-15	FAR-up	1.67 mi.
		S-16	NF	0.67 mi.
		S-17	PFC	1.0 mi.

¹As defined in Prichard et al. 1998. PFC = proper functioning condition; FAR-up = functional-at-risk upward trend; FAR-na = functional-at-risk no apparent trend; FAR-down = functional-at-risk downward trend; NF = nonfunctional.

²Assessment from 1997.

³Post-fire assessments conducted in 2002.

Lentic

In 1998, an interdisciplinary team of specialists assessed nearly 220 acres of lentic riparian habitat on the allotment. Approximately 150 acres are within the Carlson Field #1, an enclosure that has been closed to grazing since 1992. The majority of the lentic acreage is at PFC; however most of the sites are functional-at-risk, as listed in Table 5. Similar to the lotic summaries, most deficiencies are related to vegetative characteristics and alterations to surface flow from headcuts and livestock trampling. There is also information about thistle and other upland plants encroaching upon the riparian zone. Shorelines are also lacking adequate protection from vegetation, rocks, or other features.

Table 5. Lentic (standing water) riparian habitat functioning condition assessments completed for the South Deeth Allotment by pasture in 1998.

Lentic Area	Pasture	Approx. size	Functionality Rating ¹
MR-98-14, Upper Exclosure	Carlson Field #1	150 ac.	PFC
MR-98-10, Stage Stop Spring T42N R59E sec. 21	Conners Basin Pasture	15 ac.	PFC
MR-98-16, Road Spring T40N R58E sec. 11		0.5 ac	PFC
MR-98-31, Springs #1 & 2 Hot Springs Cr. T39N R59E sec. 7	Steer Pasture	0.5 ac.	FAR-up
MR-98-32, Spring #3 Hot Springs Cr. T39N R59E sec. 18		0.25 ac.	FAR-na
MR-98-33, Springs #4-6 on Hot Springs Cr. T39N R59E sec. 7		~1.0 ac.	FAR-down
Spring/meadow, T40N R59E sec. 34		0.05 ac.	FAR-down ²

¹As defined in Prichard et al. 1999. PFC = proper functioning condition, FAR-down = functional-at-risk downward trend, FAR-na = functional-at-risk no apparent trend, FAR-up = functional-at-risk upward trend, NF=nonfunctional.
²Assessed June 2003.

Pole Creek Allotment

Functionality assessments were conducted on the Pole Creek Allotment in 1998. Table 6 lists the locations, sizes, and ratings of 0.2 acre of lentic sites and 1.9 miles of lotic sites within the allotment. Both lentic and the majority of lotic areas were rated as PFC. Remaining reaches were rated as nonfunctional or FAR-no apparent trend. The main problems identified through the assessments are related to vegetative deficiencies, i.e. lack of riparian vegetation, diverse species and age composition, and encroachment of upland species. Lateral and vertical stability have also been cited as contributing to the degraded conditions.

Table 6. Lentic and lotic functionality assessments on the Pole Creek Allotment conducted in 1998.

Riparian Area	Location	Approx. size	Functionality Rating [*]
<i>Lentic</i>			
MR-98-06, Spring #1	T39N R58E sec. 24	0.1 ac.	PFC
MR-98-07, Spring #2	T39N R58E sec. 13	0.1 ac.	PFC
MR-98-08, (spring source of reservoir)	T40N R59E sec. 31	0.3 mi.	NF
<i>Lotic</i>			
MR-98-09, Pole Creek, Reach 3	T39N R58E sec. 12	0.33 mi..	NF
MR-98-09, Pole Creek, Reach 4	T39N R58E sec. 12	1.0 mi.	PFC
MR-98-09, Pole Creek, Reach 5	T39N R58E sec. 13	0.25 mi..	FAR-na

^{*}As described in Prichard et al. 1999. PFC = proper functioning condition, FAR-na = functional-at-risk not apparent trend, and NF = nonfunctional.

Appendix 3

Birds by habitat type in the South Deeth Allotment and the Pole Creek Allotment. This list was developed from the BLM Elko Bird List, the Nevada Breeding Bird Atlas, the range maps in the Sibley Guide to Birds, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Habitat information is from the Nevada Partners in Flight Bird Conservation Plan.

Species	Aspen	Cliffs and Talus	Lowland Riparian	Mountain Mahogany	Sagebrush	Salt Desert Scrub	Known to Occur in Mary's River Complex
American Bittern			B*				
Great Blue Heron			B				X
Great Egret			B				
Snowy Egret			B				X
Black-crowned Night Heron			B				
White-faced Ibis			B				
Canada Goose			B				
Wood Duck			B				
Mallard			B				X
Northern Pintail			B				X
Gadwall			B				X
American Widgeon			M				X
Northern Shoveler			B				
Blue-winged Teal			I				X
Cinnamon Teal			B				X
Green-winged Teal			M				X
Lesser Scaup			M				
Ring-necked Duck			M				
Redhead			B				X
Common Goldeneye			M				
Barrow's Goldeneye			I				
Bufflehead			M				
Common Merganser			B				X
Red-breasted Merganser			M				
Ruddy Duck			B				
Hooded Merganser			M				
Turkey Vulture	F	B	F	F	F	F	X
Northern Harrier	M		B	M	M	M	
Cooper's Hawk	B		B	M	F		
Sharp-shinned Hawk	M		M	B			
Northern Goshawk	B			F	F		
Red-shouldered Hawk			I				
Broad-winged Hawk			I	M			
Red-tailed Hawk	B	B	B	M			X
Swainson's Hawk	B		B	B			X
Ferruginous Hawk		B	W	B	B		
Rough-legged Hawk			W		F		X
Osprey			B				X
Golden Eagle		B		F	F	F	X
Bald Eagle			B				
American Kestrel	B	B	B	F	F	F	X
Prairie Falcon		B	F	F	F	F	X
Merlin			W	M			
Peregrine Falcon		B	F				
Ring-necked Pheasant			B				
Himalayan Snowcock		B		F			
Gray Partridge			B	F	B		X
Chuckar	F	B		B	B	B	
Ruffed Grouse	B						
Columbian Sharp-tailed Grouse	F			F	B		
Greater Sage Grouse				F	B		X
Blue Grouse	B		B				X

Species	Aspen	Cliffs and Talus	Lowland Riparian	Mountain Mahogany	Sagebrush	Salt Desert Scrub	Known to Occur in Mary's River Complex
Wild Turkey**			B				
Mountain Quail	B			B	B		
California Quail			B	B	B	B	
Virginia Rail			B				
Sora			B				
Sandhill Crane			B				
Killdeer			B				X
Black-necked Stilt			F				
American Avocet			F				
Greater Yellowlegs			M				
Lesser Yellowlegs			M				
Solitary Sandpiper			I				
Spotted Sandpiper			B				X
Long-billed Curlew			B				
Marbled Godwit			M				
Willet			B				X
Western Sandpiper			M				
Least Sandpiper			M				
Wilson's Snipe			B				X
Wilson's Phalarope			B				X
Bonaparte's Gull***			M				
Franklin's Gull			M				
Ring-billed Gull			F				
California Gull			F				
Black Tern			M				
Caspian Tern			F				X
Rock Dove		B	F				
Band-tailed Pigeon	B						
White-winged Dove			B				
Mourning Dove	B		B	B			X
Yellow-billed Cuckoo**			B				
Greater Roadrunner***			B			I	
Barn Owl		B	B				
Long-eared Owl	B		B	B			X
Short-eared Owl			M				X
Flammulated Owl	M?			B?			
Western Screech Owl	B		B	M			
Great Horned Owl	B	B	B	B			X
Northern Pygmy Owl	B		B				
Burrowing Owl			B		B	B	X
Northern Saw-whet Owl	B						
Common Nighthawk	B		B	B	B	B	X
Common Poor-will	B	B	B	B	B	B	X
Belted Kingfisher			B				X
White-throated Swift		B					
Black Swift**			I				
Black-chinned Hummingbird			B				X
Calliope Hummingbird	B			B?			
Broad-tailed Hummingbird	B						
Rufous Hummingbird	B		M	F	M	M	
Northern Flicker	B		B	F			X
Lewis's Woodpecker	B		M				
Downy Woodpecker	B		B	B?			X
Hairy Woodpecker	B		M				X
Williamson's Sapsucker	B		B				
Red-naped Sapsucker**	B		B	B			X
Yellow-bellied Sapsucker			I				
Western Wood-pewee	B		B				X
Willow Flycatcher			B				X
Dusky Flycatcher	B			B			X
Gray Flycatcher				B	B		X
Cordilleran Flycatcher			M				X
Black Phoebe***			B				

Species	Aspen	Cliffs and Talus	Lowland Riparian	Mountain Mahogany	Sagebrush	Salt Desert Scrub	Known to Occur in Mary's River Complex
Say's Phoebe		B					X
Ash-throated Flycatcher			B				X
Western Kingbird			B				X
Eastern Kingbird			I				
Northern Shrike			I				
Loggerhead Shrike				B	B	B	X
Warbling Vireo	B		B				X
Red-eyed Vireo			I				
Western Scrub-jay				B			
Black-billed Magpie			B				X
American Crow			B				X
Common Raven		B	B				X
Horned Lark					B	B	X
Tree Swallow	B		B				X
Violet-green Swallow	B	B	M				X
Northern Rough-winged Swallow			B				X
Bank Swallow			B				X
Barn Swallow		B	M				X
Cliff Swallow		B	M				X
Juniper Titmouse				B?			
Black-capped Chickadee				B?			
Mountain Chickadee			W	B?			
Bushtit			B?	B	B	B	X
Bewick's Wren**			B	B			X
House Wren	B		B				X
Winter Wren	I		I				
Rock Wren		B					X
Canyon Wren		B					
American Dipper			B				X
Ruby-crowned Kinglet							
Blue-gray Gnatcatcher**			B	B			
Mountain Bluebird	B	B			F		X
Western Bluebird			B				
Varied Thrush			I				
American Robin	B		B	B			X
Veery			I				
Swainson's Thrush	B						
Hermit Thrush	B			B			X
Northern Mockingbird			B				
Gray Catbird			I				
Sage Thrasher					B	B	X
American Pipet						W	
Bohemian Waxwing			W				
Cedar Waxwing			B				X
European Starling	B		B				X
Orange-crowned Warbler	B		M				X
Virginia's Warbler				B			
Yellow Warbler	B		B				X
Chestnut-sided Warbler			I				
Townsend's Warbler	M		M				
Black-throated Gray Warbler				B			
Yellow-rumped Warbler	B			B?			X
Blackpoll Warbler			I				
Northern Waterthrush			I				
MacGillivray's Warbler	B						X
Common Yellowthroat			B				X
Wilson's Warbler	B						X
Yellow-breasted Chat			B				X
Summer Tanager			B				
Lazuli Bunting			B				X
Indigo Bunting			B?				
Blue Grosbeak****			B				
Black-headed Grosbeak	B		B				

Species	Aspen	Cliffs and Talus	Lowland Riparian	Mountain Mahogany	Sagebrush	Salt Desert Scrub	Known to Occur in Mary's River Complex
Rose-breasted Grosbeak			I	I			
Spotted Towhee			B	B			
Green-tailed Towhee				B			X
Black-throated Sparrow**					B	B	
Sage Sparrow					B	B	
Brewer's Sparrow					B		X
American Tree Sparrow			W				X
Vesper Sparrow				B	B		
Lark Sparrow**			B		B	B	
Grasshopper Sparrow			B				
Fox Sparrow	B						X
Song Sparrow			B				X
Lincoln's Sparrow			M				
Dark-eyed Junco - Slate-colored, Oregon, and Gray-headed	B		W				X
Harris' Sparrow			I				
White-crowned Sparrow	B		W				X
Golden-crowned Sparrow			I				
White-throated Sparrow			I				
Lapland Longspur****			I			I	
Snow Bunting****			I		I	I	
Northern Oriole			B				X
Western Meadowlark			B		B	B	X
Bobolink			B				X
Red-winged Blackbird			B				X
Brewer's Blackbird			B				X
Great-tailed Grackle			B				
Common Grackle**			I				
Brown-headed Cowbird	B		B	B	B		X
Gray-crowned Rosy Finch		B		W			
Black Rosy Finch		B		W	W		
House Finch			B				X
Purple Finch***			I				
Cassin's Finch	B			B			X
Lesser Goldfinch	B		M	B			
American Goldfinch	M		W	M	M	M	X
Common Redpoll			I				
House Sparrow			B				X

Appendix 4

Mammals by life zone in the South Deeth Allotment and the Pole Creek Allotment. This list was developed from the BLM Elko Mammal List, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Data on life zones are from Hall's Mammals of Nevada.

Species	Upper Sonoran (Salt Desert)	Upper Sonoran (Sagebrush)	Canadian (Spruce-Fir/Aspen)
Merriam's Shrew		X	
Dusky Shrew			X
Vagrant Shrew	X	X	X
Water Shrew	X	X	X
Preble's Shrew		X	X
Pallid Bat	X	X	
Townsend's big-eared Bat	X	X	
Big Brown Bat	X	X	X
Spotted Bat	X	X	
Silver-haired Bat		X	X
Western Red Bat*	X	X	
Hoary Bat		X	X
California Myotis*	X		
Western Small-footed Myotis	X	X	
Little Brown Bat	X	X	X
Fringed Myotis	X	X	
Long-legged Myotis	X	X	X
Yuma Myotis*	X	X	X
Western Pipistrelle*	X	X	
Brazilian Free-tailed Bat	X		
Pika*			X
White-tailed Jack Rabbit			X
Snowshoe Hare*			X
Black-tailed Jack Rabbit	X	X	
Nuttall's Cottontail		X	X
Desert Cottontail	X	X	
Pygmy Rabbit	X	X	
Yellow-bellied Marmot	X	X	X
Townsend's Ground Squirrel	X	X	
Wyoming Ground Squirrel	X	X	
Belding's Ground Squirrel	X	X	X
White-tailed Antelope Squirrel	X	X	
Golden-mantled Ground Squirrel			X
Least Chipmunk		X	
Yellow-pine Chipmunk			X
Uinta Chipmunk			X
Northern Pocket Gopher			X
Townsend's Pocket Gopher	X	X	
Botta's Pocket Gopher*	X	X	X
Southern Pocket Gopher*	X	X	X
Little Pocket Mouse	X	X	
Great Basin Pocket Mouse	X	X	
Dark Kangaroo Mouse	X	X	
Ord's Kangaroo Rat	X	X	
Chisel-toothed Kangaroo Rat	X	X	
Western Harvest Mouse	X	X	
Canyon Mouse	X	X	
Deer Mouse	X	X	X
Brush Mouse**	X	X	
Pinon Mouse		X	
Northern Grasshopper Mouse	X	X	
Desert Woodrat	X	X	
Bushy-tailed Woodrat			X

Species	Upper Sonoran (Salt Desert)	Upper Sonoran (Sagebrush)	Canadian (Spruce- Fir/Aspen)
Montane Vole	X	X	X
Long-tailed Vole			X
Sagebrush Vole		X	
Muskrat	X	X	X
Beaver	X	X	X
Black Rat	X	X	
House Mouse	X	X	
Western Jumping Mouse			X
Porcupine	X	X	X
Coyote	X	X	X
Red Fox		X	X
Gray Fox	X	X	
Kit Fox	X	X	
Raccoon	X	X	X
Ringtail	X	X	
Ermine			X
Long-tailed Weasel	X	X	X
Mink	X	X	X
River Otter	X	X	X
Badger	X	X	X
Western Spotted Skunk	X	X	
Striped Skunk	X	X	X
Mountain Lion	X	X	X
Bobcat	X	X	X
Mule Deer		X	X
Pronghorn	X	X	
Bighorn Sheep	X	X	X
Elk		X	

Appendix 5

Mammals by vegetation association in the South Deeth Allotment and the Pole Creek Allotment. This list was developed from the BLM Elko Mammal List, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Data on plant communities is from the USDI BLM Technical Note Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A.W. Kuchler's Associations for the Eleven Western States. X = Habitat Association was listed. Y = Habitat Association not actually listed, but referred to in the narrative for the species.

Species	Mountain Mahogany- Oak Scrub (37)	Great Basin Sagebrush (38)	Saltbush- Greasewood (40)	Fescue- Wheatgrass (50)	Wheatgrass -Bluegrass (51)	Sagebrush Steppe (55)	Wheatgrass- Needlegrass Shrubsteppe (56)	Aspen (if documented)	Riparian (if documented)	Water Dependent (if documented)	Deciduous Riparian (if documented)
Merriam's Shrew		X				X					
Dusky Shrew									Y		
Vagrant Shrew									Y		
Water Shrew									Y		
Preble's Shrew						X			Y		Y
Pallid Bat			X	X	X	X					
Townsend's big-eared Bat			X								
Big Brown Bat										Y	
Spotted Bat										Y	
Western Red Bat*										Y	
Hoary Bat										Y	
California Myotis*					X	X					
Western Small-footed Myotis										Y	
Little Brown Bat										Y	
Fringed Myotis			Y		X					Y	
Long-legged Myotis					X						
Yuma Myotis*			X			X			Y	Y	
Western Pipistrelle*		X								Y	
Brazilian Free-tailed Bat		X	X								
White-tailed Jack Rabbit		X						Y			
Snowshoe Hare*									Y		
Black-tailed Jack Rabbit		X			X	X					
Nuttall's Cottontail		X				X					
Desert Cottontail		X	X								
Pygmy Rabbit		X	X			X					
Townsend's Ground Squirrel		X	X			X					
Wyoming Ground Squirrel		X				X					
White-tailed Antelope Squirrel			X								
Golden-mantled Ground Squirrel	X										
Least Chipmunk		X	X			X					
Cliff Chipmunk	X										
Uinta Chipmunk	X										
Townsend's Pocket Gopher		X	X			X					

Species	Mountain Mahogany- Oak Scrub (37)	Great Basin Sagebrush (38)	Saltbush- Greasewood (40)	Fescue- Wheatgrass (50)	Wheatgrass -Bluegrass (51)	Sagebrush Steppe (55)	Wheatgrass- Needlegrass Shrubsteppe (56)	Aspen (if documented)	Riparian (if documented)	Water Dependent (if documented)	Deciduous Riparian (if documented)
Southern Pocket Gopher*			X								
Little Pocket Mouse		X	X								
Great Basin Pocket Mouse		X	X	X	X	X					
Dark Kangaroo Mouse		X	X								
Ord's Kangaroo Rat		X	X			X	X		Y		
Chisel-toothed Kangaroo Rat		X	X								
Western Harvest Mouse				X		X			Y		
Canyon Mouse		X	X								
Deer Mouse						Y		Y	Y		
Brush Mouse**	X										
Pinon Mouse			X			X					
Northern Grasshopper Mouse						X					
Desert Woodrat		X	X								
Bushy-tailed Woodrat	X					X					
Montane Vole	X					X			Y		
Long-tailed Vole						X					
Sagebrush Vole		X	X			X	X				
Muskrat									Y	Y	
Beaver								Y	Y	Y	Y
Western Jumping Mouse	X							Y	Y		
Porcupine						X			Y		Y
Gray Wolf*						X					
Coyote		Y		Y	Y	Y	Y				
Gray Fox		X	X								
Kit Fox		X	X								
Raccoon									Y		
Ermine										Y	
Long-tailed Weasel										Y	
Mink										Y	
River Otter									Y	Y	
Badger			Y	Y	Y						
Western Spotted Skunk	Y	Y	Y	Y	Y	Y	Y				
Striped Skunk	Y	Y	Y	Y	Y	Y	Y		Y	Y	
Bobcat	Y	Y	Y	Y	Y	Y	Y				
Mule Deer	Y	Y	Y	Y	Y	Y	Y				
Pronghorn						X					
Bison*						X					
Moose	X										

Appendix 6

Bats by vegetation type in the South Deeth Allotment and the Pole Creek Allotment. This list was put together from species information in the 2006 Nevada Bat Conservation Plan and may not be a complete list of potential habitats.

Species	Aspen	Cliffs and Talus	Mountain Mahogany	Sagebrush	Salt Desert Scrub	Riparian	Comments
Pallid Bat				X	X		
Townsend's big-eared Bat			X	X	X		
Big Brown Bat	X			X			
Spotted Bat		X		X	X	X	
Silver-haired Bat	X					X	
Western Red Bat*						X	
Hoary Bat	X						
California Myotis*							Variety of habitats.
Western Small-footed Myotis				X	X		
Long-eared Myotis				X	X		
Fringed Myotis					X		
Long-legged Myotis				X	X		
Yuma Myotis*				X	X	X	
Western Pipistrelle*				X	X		
Brazilian Free-tailed Bat		X					Variety of Habitats.

Appendix 7

Reptiles and amphibians by vegetation association in the South Deeth Allotment and the Pole Creek Allotment. This list was developed from the BLM Elko Reptiles and Amphibians List, the April 2005 NDOW Master Species List, and the Nevada Wildlife Action Plan Range Maps, as well as those known to exist in the District. Data on plant communities is from the USDI BLM Technical Note Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A.W. Kuchler's Associations for the Eleven Western States. X = Habitat Association was listed. Y = Habitat Association not actually listed, but referred to in the narrative for the species.

Species	Mountain Mahogany-Oak Scrub (37)	Great Basin Sagebrush (38)	Saltbush-Greasewood (40)	Fescue-Wheatgrass (50)	Wheatgrass-Bluegrass (51)	Sagebrush Steppe (55)	Wheatgrass-Needlegrass Shrubsteppe (56)	Riparian (if documented)	Water Dependent (if documented)
Tiger Salamander						X	X	Y	Y
Great Basin Spadefoot		X	X			X		Y	Y
Western Toad		X				X		Y	Y
Woodhouse's Toad						X		Y	Y
Pacific Treefrog	X	X	X			X		Y	Y
Columbian Spotted Frog	Y							Y	Y
Northern Leopard Frog								Y	Y
Bullfrog								Y	Y
Great Basin Collared Lizard*		X	X						
Desert Collared Lizard		X	X						
Long-nosed Leopard Lizard		X	X			X			
Western Fence Lizard		X	X						
Sagebrush Lizard		X	X			X			
Side-blotched Lizard		X	X			X			
Desert Horned Lizard		X	X						
Short-horned Lizard						X			
Greater Short-horned Lizard**		X							
Western Skink	X	X				X			
Western Whiptail		X	X			X			
Rubber Boa								Y	
Ringneck Snake	X								
Racer		X				X			
Striped Whipsnake	X	X	X			X			
Great Basin Gopher Snake**		X	X			X			
Common Kingsnake**		X	X						
Sonoran Mountain Kingsnake**	X								
Gopher Snake		X	X			X			
Long-nosed Snake		X	X						
Common Garter Snake			X			X			

Appendix 8

Animals by key habitats in the South Deeth Allotment and the Pole Creek Allotment. This was developed from species shown in the Nevada Wildlife Action Plan to inhabit the District as well as those from BLM Elko District Lists, the April 2005 NDOW Master Species List, and widely accepted range maps. Key Habitat Types are from the Nevada Wildlife Action Plan.

Species	Aspen Woodland	Cliffs and Canyons	Desert Playas and Ephemeral Pools	Exotic Grasslands and Forblands	Grasslands and Meadows	Intermountain Cold Desert Scrub	Intermountain Rivers and Streams	Lower Montane Woodlands	Sagebrush
Northern Leopard Frog							X		
Columbian Spotted Frog							X		
Great Basin Collared Lizard*		X		X		X			X
Long-nosed Leopard Lizard				X	X	X			X
Pygmy Short-horned Lizard					X			X	X
Desert horned Lizard		X		X	X	X		X	X
Greater Short-horned Lizard**		X						X	X
Sonoran Mountain Kingsnake**		X					X	X	
Bull Trout							X		
Lahontan Cutthroat Trout							X		
California Floater							X		
Merriam's Shrew					X			X	X
Montane Shrew					X		X		
Water Shrew							X		
Preble's Shrew					X		X		X
Vagrant Shrew					X		X		
Western Small-footed Myotis		X				X		X	X
Fringed Myotis								X	
Western Red Bat**							X		
Hoary Bat							X	X	
Spotted Bat		X							
Townsend's Big-eared Bat								X	
American Pika**		X			X				
Pygmy Rabbit									X
Wyoming Ground Squirrel					X				X
Dark Kangaroo Mouse			X		X	X			X
Brush Mouse*								X	
Sagebrush Vole									X
Western Jumping Mouse					X		X		
Kit Fox						X			X
Ringtail		X						X	
American Martin**	X								

* These were not on the BLM Elko Field Office Species Lists but are potentially on the District according to Nevada Wildlife Action Plan.

** These were not on the BLM Elko Field Office Species Lists but were on the April 2005 NDOW Master List.

*** These were not on the BLM Elko Field Office Species Lists but were documented as breeding in the district by the Great Basin Bird Observatory in their Atlas of the Breeding Birds of Nevada.

Appendix 9

BLM Sensitive Terrestrial Vertebrate Species in the South Death Allotment and the Pole Creek Allotment. This list was developed by selecting those species in the previous appendices that are on the current BLM Sensitive Species List.

Birds

Common Name	Genus	Species
Northern Goshawk	Accipiter	gentilis
Swainson's Hawk	Buteo	swainsoni
Ferruginous Hawk	Buteo	regalis
Golden Eagle	Aquila	chrysaetos
Bald Eagle	Haliaeetus	leucocephalus
Prairie Falcon	Falco	mexicanus
Peregrine Falcon	Falco	peregrinus
Columbian Sharp-tailed Grouse	Tympanuchus	phasianellus
Greater Sage Grouse	Centrocercus	urophasianus
Mountain Quail	Oreortyx	pictus
Sandhill Crane	Grus	canadensis
Long-billed Curlew	Numenius	americanus
Black Tern	Chlidonias	niger
Long-eared Owl	Asio	otus
Short-eared Owl	Asio	flammeus
Flammulated Owl	Otus	flammeolus
Burrowing Owl	Athene	cunicularia
Lewis's Woodpecker	Melanerpes	lewis
Red-naped Sapsucker	Sphyrapicus	nuchalis
Loggerhead Shrike	Lanius	ludovicianus
Juniper Titmouse	Baeolophus	ridgwayi
Yellow-breasted Chat	Icteria	virens
Vesper Sparrow	Pooecetes	gramineus
Bobolink	Dolichonyx	oryzivorus
Black Rosy Finch	Leucosticte	atrata

Mammals

Common Name	Genus	Species
Preble's Shrew	Sorex	preblei
Pallid Bat	Antrozous	pallidus
Townsend's big-eared Bat	Corynorhinus	townsendii
Big Brown Bat	Eptesicus	fuscus
Spotted Bat	Euderma	maculatum
Silver-haired Bat	Lasionycteris	noctivagans
Western Red Bat	Lasiurus	blossevillei
Hoary Bat	Lasiurus	cinereus
California Myotis	Myotis	californicus
Western Small-footed Myotis	Myotis	ciliolabrum
Long-eared Myotis	Myotis	evotis
Little Brown Bat	Myotis	lucifugus
Fringed Myotis	Myotis	thysanodes
Long-legged Myotis	Myotis	volans
Yuma Myotis	Myotis	yumanensis
Western Pipistrelle	Pipistrellus	hesperus
Brazilian Free-tailed Bat	Tadarida	brasiliensis
Pygmy Rabbit	Sylvilagus	idahoensis
River Otter	Lontra	canadensis

Reptiles

Common Name	Genus	Species
Short-horned Lizard	Phrynosoma	douglassi
Sonoran Mountain Kingsnake	Lampropeltis	pyromelana

Amphibians

Common Name	Genus	Species
Northern Leopard Frog	Rana	pipiens

Appendix 10
MARYS RIVER COMPLEX

GRAZING CAPACITY ANALYSIS

The Marys River Complex Allotment Evaluation issued in November 2003 described the grazing capacity (carrying capacity) analysis procedure (see Appendix 10). Rather than reiterate that description, we will highlight some points from that description below, and also clarify other changes made to the analysis since the 2003 evaluation was issued.

The formula used to calculate the grazing capacity is as follows:

$$\frac{\text{Actual Use (AUMs)} \times \text{Utilization Objective}}{\text{Recorded Utilization}} = \text{Grazing Capacity}$$

In the 2003 evaluation, the utilization objective(s) for the key grass species ranged from 45% to 55% of current year's growth. Since the evaluation was issued, the BLM has standardized the utilization objective for the key grass species at 50% of current year's growth. The BLM believes this level of use is compatible with achievement of the land use plan objectives and standards for rangeland health, and establishes a consistent objective among the allotments in the Marys River Complex.

In addition, the 2003 evaluation also identified the utilization objective for bitterbrush as 25% of current year's growth and was based on use by livestock. Since the primary use periods by mule deer (summer and intermediate ranges) generally overlap the livestock use periods, the BLM has established a utilization objective for bitterbrush at 25% of current year's growth at the end of the spring use period (mid July), and 45% by the end of the summer/fall use period, which combines the utilization objective for both livestock and big game.

Recorded utilization is taken from data collected at key areas and/or from levels of use recorded on use pattern maps. Taking the recorded utilization level from a use pattern map was done in two ways. If all or nearly all of the use in a pasture was observed to be in the slight or light use category, the dominant level of use was selected as the recorded utilization level. If there was substantial use observed in the moderate to heavy use categories, a weighted average calculation was performed incorporating only the moderate and heavy use areas to arrive at what would be applied as the "recorded utilization" level. Use of only the moderate and heavy use areas in the weighted average is based on the limiting factor method described in Appendix 10 of the 2003 evaluation. If a relatively large part of the use area was heavy use, the heavy use level was selected for use in the grazing capacity calculation.

As explained in Appendix 10 of the 2003 evaluation, the years that represented the lowest and highest calculated capacities were excluded from the calculated average. This reduces the tendency for the average to be unduly skewed by unusually low and high values. In addition, some years of data were excluded from calculation of the average capacity because the actual use was extremely low and not considered representative of the capacity of the pasture, or excluded because the utilization data were recorded prior to the use period reported on the actual use

report. In some cases, all the data years were included in the average where there were only a few years of data from which to calculate an average.

Other additions and corrections were made to the tables used to calculate the grazing capacities. One of the notable additions is data for 2004 collected after the 2003 evaluation was issued. Another correction involved reducing total actual use to the level of actual use up to the time the utilization data were collected. In a few cases, there was substantial use that occurred after the utilization data were collected and it would be inappropriate to apply the total actual use to a utilization level recorded earlier in the use period. In some cases the recommended current grazing capacities were based on more representative ratios between the amount of public and private land in a pasture.

The revised average capacities also include averages based on the capacities for the spring use period, with use ending about the middle of July, and for the summer/fall period when use ends in September/October. The calculated capacities are generally higher when based on spring use because there can be a wider variety of plants grazed during the spring growing season, and there can be regrowth during this period that can reduce the amount of utilization observed. Regrowth can also occur in the fall but noticeable regrowth is uncommon. During the summer/fall, there is normally little regrowth because of limited soil moisture and the tendency for plant growth to slow when it is hot (summer) or cold (fall).

SOUTH DEETH ALLOTMENT

Winter Creek Pasture

The Winter Creek Pasture is 32,112 acres in size. The current grazing preference allocation for this pasture is 1,943 AUMs. The average calculated grazing capacity in the 2003 evaluation was 2,390 AUMs; however, the recommended grazing capacity in the 2003 evaluation was 1,943 AUMs. The revised average capacity was calculated as 2,656 AUMs based primarily on spring and summer use. The pasture has also been grazed in the fall and/or winter, and the one year of data during that period of use resulted in a grazing capacity of 646 AUMs. Thurber needlegrass and Webber needlegrass were identified as key species in this pasture.

The grazing capacity in this pasture varies depending on how many of the water wells are operated in the spring and/or winter, and the tendency for the cattle to want to be in the lower part of the pasture in the winter. During winter, the grazing capacity will tend to be lower because the cattle prefer to occupy the south end of the pasture. The grazing capacity of this pasture can also be more when there is abundant growth of cheatgrass in the spring and/or available for use the following winter if it is not covered by snow. There is also unfenced private land, which adds to the capacity of the pasture, but it is not owned or leased by the permittee and therefore its grazing capacity is not allocated to the permittee.

Most of the years upon which the average was calculated are based on grazing cow/calf pairs or a combination of cow/calf pairs and yearlings.

The northern half of this pasture burned in 2006 and has been fenced separately from the unburned area to the south.

Proposed Grazing Capacity:

Establish the grazing capacity for this pasture at 1,943 AUMs for spring/summer use, and one-half that capacity for winter use (971 AUMs), by cow/calf pairs or a combination of cow/calf pairs and yearlings.

Given the variables that affect the grazing capacity of this pasture, provisions for nonrenewable use should be provided when additional forage is available and the cattle can be distributed properly to make use of the additional forage. In the same respect, there would be a term and condition that the permittee monitor so as not to exceed the utilization objectives, with provisions for reductions when they are exceeded by 10% or more in any one year.

North Steer Pasture

The Steer Pastures are 31,996 acres in size. The current grazing preference allocation for this pasture is 1,243 AUMs. In 2002, following a wildfire in 2001, this portion of what used to be a larger Steer Pasture was fenced to create the North Steer Pasture. There is only one year of utilization data (2004) since this pasture was created. The average calculated grazing capacity in the 2003 evaluation was 987 AUMs and was based on splitting the calculated grazing capacity of the larger Steer Pasture on the proportion of existing grazing preference between the North (38%) and South (62%) Steer Pastures; however, most of the moderate to heavy areas of use are in the South Steer Pasture with the calculated grazing capacity limited by those use areas. The revised average capacity, based on the same proportions as used in the 2003 evaluation, is calculated as 1,097 AUMs (38% of 2,887 AUMs), with use occurring from spring through fall, although there were a few years when there was only use during the spring or spring/summer.

Looking at the average calculated capacities for cow/calf pairs compared to yearlings, the averages indicate the grazing capacity for cow/calf pairs is approximately 25% greater than yearlings. This comparison is the opposite of what would be expected; therefore, it seems that additional information is needed to clarify grazing capacities between cow/calf pairs and yearlings.

Thurber needlegrass had been identified as the key species in the Steer Pasture prior to installation of the fence that split the pasture into the northern and southern parts. The most recent utilization observations for the North Steer Pasture used bluebunch wheatgrass as the key species.

In addition to the wildfire in 2001, this pasture burned again in 2006. The calculated grazing capacity noted above does not include any years of data since the 2001 fire. However, the calculated grazing capacity of 1,438 AUMs from 2004 data provides some indication of the grazing capacity, with yearling cattle, since the 2001 fire.

Proposed Grazing Capacity:

Establish the grazing capacity for this pasture at 1,097 AUMs for spring/summer/fall use. Since the North Steer Pasture was only recently created, additional monitoring data will be needed to further clarify its grazing capacity.

South Steer Pasture

The current grazing preference allocation for this pasture is 2,034 AUMs. In 2002, this portion of what was a larger Steer Pasture was fenced to create the South Steer Pasture. The average calculated grazing capacity in the 2003 evaluation was 1,611 AUMs and was based on splitting the calculated grazing capacity of the larger Steer Pasture on the proportion of acres and existing grazing preference between the North (38%) and South (62%) Steer Pastures; however, most of the moderate to heavy areas of use are in the South Steer Pasture with the calculated grazing capacity limited by those use areas. The revised average capacity for the South Steer Pasture, based on the same proportions as used in the 2003 evaluation, is calculated as 1,790 AUMs (62% of 2,887 AUMs), with use occurring from spring through fall, although there were a few years when there was only use during the spring or spring/summer. There is only one year of utilization data (2004) since this pasture was created which resulted in a calculated grazing capacity of 1,999 AUMs. Thurber needlegrass has been identified as the key species in this pasture.

As explained for the North Steer Pasture, looking at the average calculated capacities for cow/calf pairs compared to yearlings, the averages indicate the grazing capacity for cow/calf pairs is approximately 25% greater than yearlings. This comparison is the opposite of what would be expected; therefore, it seems that additional information is needed to clarify grazing capacities between cow/calf pairs and yearlings.

Proposed Grazing Capacity:

Establish the grazing capacity for this pasture at 1,790 AUMs for spring/summer/fall use. Since the South Steer Pasture was only recently created, additional monitoring data will be helpful to further clarify its grazing capacity.

North Hanks Pasture

The Hanks Pasture is 30,424 in size. The current grazing preference allocation for the North Hanks Pasture is 3,384 AUMs. In 2002, following a wildfire in 2001, this portion of what was a larger Hanks Creek Pasture was fenced to create the North Hanks Pasture. There is no utilization data since this pasture was created. The average calculated grazing capacity in the 2003 evaluation was 2,556 AUMs and was based on splitting the calculated grazing capacity of the larger Hanks Creek Pasture on the proportion of acres and existing grazing preference between the North (59%) and South (41%) Hanks Creek Pastures; however, most of the moderate to heavy areas of use are in the South Hanks Creek Pasture with the calculated grazing capacity limited by those use areas. The revised average capacity, based on the same proportions as used in the 2003 evaluation, is calculated as 2,800 AUMs (59% of 4,745 AUMs), with use occurring during spring/summer and spring/summer/fall. All of the years of data upon which the average

is calculated are based on use by yearling cattle. Bluebunch wheatgrass, Idaho fescue, and bitterbrush have been identified as the key species in this pasture.

In addition to the wildfire in 2001, this pasture burned again in 2006. The calculated grazing capacity noted above does not include any years of data since the 2001 burn.

Proposed Grazing Capacity:

Establish the grazing capacity for this pasture at 2,800 AUMs based on use by yearling cattle. When cow/calf pairs are grazed, authorized use would be reduced to 75% of the capacity established for yearling cattle based on the rule of thumb that yearling cattle consume only 75% of the amount of forage consumed by cow/calf pairs. If only cow/calf pairs are grazed, authorized use would be limited to 2,100 AUMs. Mountainous terrain in this pasture affects distribution, with yearlings likely to distribute more widely. Additional data would help clarify to what extent the terrain has on grazing capacity when used by cow/calf pairs. Since the North Hanks Pasture was only recently created following the 2001 wildfire, and has burned again in 2006, additional monitoring data will be helpful to further clarify its grazing capacity.

South Hanks Pasture

The current grazing preference allocation for this pasture is 2,339 AUMs. In 2002, this portion of what was a larger Hanks Creek Pasture was fenced to separate the burned area in the North Hanks Pasture from the South Hanks Pasture. A substantial part of the South Hanks Pasture also burned in 2006. The average calculated grazing capacity in the 2003 evaluation was 1,776 AUMs and was based on splitting the calculated grazing capacity of the larger Hanks Creek Pasture on the proportion of acres and existing grazing preferences between the North (59%) and South (41%) Hanks Creek Pastures; however, most of the moderate to heavy use areas are in the South Hanks Creek Pasture with the calculated grazing capacity limited by those use areas.

The revised average capacity, based on the same proportions as used in the 2003 evaluation, is calculated as 1,945 AUMs (41% of 4,745 AUMs), with use occurring during spring/summer and spring/summer/fall. All of the years of data upon which the average is calculated are based on use by yearling cattle. There is only one year of utilization data (2004) since this pasture was created resulting in a calculated capacity of 2,245 AUMs. There is no utilization on which to calculate a separate grazing capacity for the North Hanks Pasture; therefore, a combined total capacity for both pastures cannot be calculated to compare to the previous years, prior to the North and South Hanks Pastures being separated from each other. Thus, the 2004 data is not included in the average. Thurber needlegrass and Nevada bluegrass have been identified as the key species in this pasture.

Proposed Grazing Capacity:

Establish the grazing capacity for this pasture at 1,945 AUMs based on use by yearling cattle. When cow/calf pairs are grazed, authorized use should be reduced to 75% of the capacity established for yearling cattle based on the rule of thumb that yearling cattle consume only 75% of the amount of forage consumed by cow/calf pairs. If only cow/calf pairs are grazed,

authorized use would be limited to 1,459 AUMs. Since the South Hanks Pasture was only recently created, and was burned by wildfire in 2006, additional monitoring data will be helpful to further clarify its grazing capacity.

Conners Basin Pasture

The Conners Basin Pasture is 14,755 acres in size. The current grazing preference allocation for this pasture is 3,333 AUMs. The average calculated grazing capacity in the 2003 evaluation was 2,122 AUMs. The revised average capacity was calculated as 3,286 AUMs based on two years of spring use and one year of spring/summer/fall use. The calculated average grazing capacity for spring use, based on two years of data, is 3,429 AUMs. The calculated capacity for spring/summer/fall use, based on one year of data, is 2,998 AUMs. All three years included in the average calculated capacity were years when yearling cattle were grazed. Bluebunch wheatgrass and Idaho fescue were identified as key species in this pasture.

A substantial part of this pasture burned in 2001, with a portion of this pasture north of Hanks Creek burning again in 2006. Following the 2001 fire, the native perennial grasses increased productivity and upland grazing capacity. The calculated grazing capacities noted above do not include any years of data since the 2001 burn. Although the data from 2004 was excluded from the average because it was the year with the highest calculated capacity (the highest and lowest years are excluded from the average as explained at the beginning of this section), the calculated grazing capacity from the 2004 provides some indication that forage production has increased following the 2001 fire.

Proposed Grazing Capacity:

Establish the grazing capacity for this pasture at 3,429 AUMs for the spring use period, and 2,998 AUMs for the summer/fall use period, if yearling cattle are grazed. When cow/calf pairs are grazed, authorized use would be reduced to 75% of the capacities established above for yearling cattle based on the rule of thumb that yearling cattle consume only 75% of the amount of forage consumed by cow/calf pairs. If only cow/calf pairs are grazed, authorized use would be limited to 2,572 AUMs for the spring use period, and 2,249 AUMs for the summer/fall use period. Mountainous terrain in this pasture affects distribution, with yearlings likely to distribute more widely. Additional data would help clarify to what extent the terrain has on grazing capacity when used by cow/calf pairs. Since the proposed grazing capacities are based on only a few years of data, additional monitoring data would help clarify the current upland grazing capacities, especially following the fires.

South Cross Fields

The South Cross Fields are 2,383 acres in size. The current grazing preference allocation for this pasture is 3,200 AUMs. The calculated grazing capacity in the 2003 evaluation, based on one year of data, was 1,178 AUMs. However, the 2003 evaluation recommended the grazing preference remain unchanged at 3,200 AUMs.

Proposed Grazing Capacity:

Retain the grazing preference for these fields at 3,200. There is only one year of data. The grazing capacity of these fields is likely to vary depending on the amount of irrigation water that can be spread on the fields. Additional monitoring data should help clarify the grazing capacities for these irrigated fields.

Pole Creek Allotment

The Pole Creek Allotment is 5,633 acres in size. The current grazing preference allocation for this pasture is 598 AUMs for both cattle (561 AUMs) and sheep use (37 AUMs). There is no data on utilization from which to calculate the upland grazing capacity. The 2003 evaluation recommended the current active preference be retained.

Proposed Grazing Capacity:

Retain the current grazing preference of 598 AUMs. This allotment has generally been used as a pasture to temporarily hold cattle moving back and forth between the low and high country, and as an area used briefly by the sheep permittee when moving to and from adjacent allotments. Data on utilization is needed to assess the upland grazing capacity.

Table 10A Grazing Capacity Analysis Summary
Grazing Capacity Analysis Summary

Allotment	Pasture	Current Preference (AUMs)	2003 Evaluation	Proposed Grazing Capacities (AUMs) ¹					
				% Public Land (PL)	Use Periods and Types of Livestock ²				
					Spring	Summer	Fall	Winter	
South Deeth									
32,112 acres	Winter Creek	1,943	1,943	89	1,943			971	
31,996 acres	North Steer	1,243	987	100	1,097				
	South Steer	2,034	1,611	100	1,790				
30,424 acres	North Hanks	3,384	2,556	100	2,800 yearlings 2,100 cow/calf				
	South Hanks	2,339	1,776	100	1,945 yearlings 1,459 cow/calf				
14,755 acres	Conners Creek	3,333	2,122	100	3,429 yearlings 2,572 cow/calf	2,998 yearling 2,249 cow/calf			
2383 acres	South Cross	3,200	3,200	100		3,200			
	FFR	12	12	100	12				
112,304 acres	Total	17,488	14,207		Maximum of 16,216 AUMs (yearlings) or 14,173 AUMs (cow/calf). Authorized use will depend on use periods for the grazing system, and type of cattle.				
Pole Creek		561 37	561 37	97 100	561 Cattle 37 Sheep				
5,633 acres	Total	598	598		598 AUMs.				

¹ Under the Proposed Grazing Capacity numbers, if there is more than one AUM number for a pasture, those numbers are not additive. For example, the Winter Creek Pasture shows a grazing capacity of 1,943 AUMs for spring/summer use, or 971 AUMs for winter use. The 1,943 and 971 AUMs should not be added together to arrive at a grazing capacity for any one year.

² The type of livestock is cow/calf or a combination of cow/calf/yearling cattle unless otherwise noted in the table. Use in the Pole Creek Allotment includes sheep use.

Appendix 11
Actual Use Summary – South Deeth Allotment

Appendix 11A

Year	Winter Creek	Steer	Conners Basin	Hanks Creek	Stud	South Cross	FFR	Total
1988	2846	2444	14829*				349	5639
1989	3198	1120	1718	9185*			349	6385
1990	1018	2006	2836	3660*			257	6117
1991	1417	2966	3238	5479	2668		35	15803
1992	711	3058	3083	5742	3079	2210	35	17918
1993	23	313	3066	4560	2116	1201	35	11314
1994	4769	4669	1474	5546	1625	3012	35	21130
1995	2090	1733	1003	1874	1565	1435	12	9712
1996	1388	2642	3090	2173	1994	1743	12	13042
1997	943	3222	2574	5155	1582	1960	12	15448
1998	1688	3587	1581	6807	2084	2271	12	18030
1999	1477	3141	3218	4717	1173	1720	12	15458
2000	1182	1605	3013	4077	2416	738	50	13081
2001	1824	2210	250	5197	3311	373	50	13215
2002	2217	3362	0	5784	3323	1812	50	16548
2004	1762	2906	3270	5166		839	50	13993
2005	935	2289	0	929		1302	50	5505
2006	1554	1915	1496	1762	1864	2206	50	10847
2007	1459	229	1834	***	868	1588	50	6028
2008	1670	998	2350	***	276	3165	50	8509
AVG*	1709	2321	2058**	4331	1996	1723	78	12185

AVG*Average by pasture for all years data was available.

*Between 1988 – 1990, actual use reports showed use for North Deeth, which included Conners Basin, Hanks Creek, Stud, Antelope Basin, Heifer, and Marys River Riparian Pastures. These years were not included in the average by pasture, but were included in the average for total actual use. In 1990 the Heifer Pasture became the Hanks Creek Pasture of the Stormy Allotment and in 1991, the Antelope Basin Pasture became its own allotment.

**Average for Conners Basin not including incidental use in 2001 after the 2001 Stag Fire and 2002, for which the pasture was closed.

In 2002, the Steer and Hanks Creek Pastures were split into two, creating a north and south. Actual use was reported for the two separate pastures on the North and South Steer Pastures, but not Hanks because there was too much drift within the North and South Pastures. For North Steer, actual use was 679 AUMs and for South Steer, actual use was 2,683 AUMs.

***Closed due to Charleston Complex Fire of 2006

**Actual Use Summary - Pole Creek Allotment
Appendix 11A**

Year	Tabor Creek Cattle Co.(Smith)/Cross Ranch Grazing LLC	Lasgoity/Eureka Livestock LLC	Total
1988	206	17	223
1989	341	16	357
1990	55	18	73
1991	551	18	569
1992	697	14	711
1993	515	12	527
1994	818	17	835
1995	637	11	648
1996	480	17	497
1997	638	28	666
1998	431	80	511
1999	438	95	533
2000	460	42	502
2001	291	42	333
2002	*	117	117
2003	*	*	*
2004	*	160	160
2005	319	197	516
2006	184	94	278
2007	968	79	1047
2008	579	39	618
AVG	478	56	486

*This allotment was closed in 2002 as a result of the 2001 Isolation Fire. Use by Lasgoity (transferred to Eureka Livestock LLC) is for unloading in the spring and shipping in the fall. The average for Tabor Creek Cattle Company/Smith does not include 2002.

**Utilization Summary
South Deeth Allotment
Appendix 11B**

1987	1988	1989	1990	1991	1992	1993	1994	1997	1998	1999	2000	2002	AVG
Winter Creek Pasture - DE-01													
STTH2 1	STTH2 47	STTH2 13	STTH2 14	STTH2 8	STTH2 3		STTH2 16		STTH2 15			STTH2 40	17
ORWE 1		ORWE 5	ORWE 18	ORWE 5			ORWE 10					ORWE 16	9
Hanks Creek Pasture - DE-02													
STTH2 54		STTH2 55	STTH2 26	STTH2 45	STTH2 64	STTH2 49	STTH2 54	STTH2 34	STTH2 47	STTH2 58	STTH2 38	STTH2 67	49
		PONE3 57	PONE3 29	PONE3 45	PONE3 52	PONE3 33	PONE3 43	PONE3 19	PONE3 45	PONE3 44	PONE3 30	PONE3 63	42
Hanks Creek Pasture - DE-03													
AGSP 17	AGSP 33	AGSP 46	AGSP 2	AGSP 5	AGSP 18	AGSP 3	AGSP 12	AGSP 3	AGSP 41	AGSP 23	AGSP 26	AGSP 51	22
FEID 45	FEID 69	FEID 60	FEID 2	FEID 6	FEID 20	FEID 4	FEID 25	FEID 4	FEID 53	FEID 55	FEID 37	FEID 64	34
		PUTR2 46	PUTR2 3	PUTR2 11	PUTR2 13	PUTR2 10	PUTR2 16	PUTR2 1	PUTR2 39	PUTR2 30	PUTR2 22	PUTR2 28	20
Steer Pasture - DE-05													
STTH2 41		STTH2 31	STTH2 38	STTH2 32	STTH2 47		STTH2 62	STTH2 57	STTH2 47			STTH2 60	46
			ORWE 36				ORWE 37						37

Trend (Frequency) Summary

South Deeth Allotment

Appendix 11C

Key Area	Key Species (Frame Size)	First Reading	Second Reading	Third Reading	Fourth Reading	Changes*				
		1987	1990	1995	2000	1987-1990	1990-1995	1995-2000	1987-1995	1987-2000
DE-01	STTH2 (30)	35	41.5	49		NSC	NSC		+S	
	ORWE (30)	18	0.5	7.5		-S	+S		-S	
DE-02	STTH2 (30)	42	4	26.5		-S	+S		-S	
	PONE3 (30)	32.5	32.5	17.5		NSC	-S		-S	
DE-03	AGSP (10)	48	40.5	50		NSC	NSC		NSC	
	FEID (30)	53	52.5	58.5		NSC	NSC		NSC	
	PUTR2 (30)	9.5	7	7		NSC	NSC		NSC	
DE-05	STTH2 (30)	25.5	55	46		+S	-S		+S	

-S = Significant Decrease

+S = Significant Increase

NSC = No Significant Change

Weight-Estimate Production Data Summary

Appendix 11D

South Deeth Allotment

Year	Production (lbs./ac.)				Composition (%)				Ecological Condition Class (%)*
	Grasses	Forbs	Shrubs	Total	Grasses	Forbs	Shrubs	Total	
Winter Creek - DE-01 - Loamy 8-10" (25x19)									
1987	158	219	335	712	22	31	47	100	49 (Mid Seral)
1990	187	98	116	401	46	25	29	100	63 (Late Seral)
1995	654	103	441	1198	56	8	36	100	66 (Late Seral)
South Hanks - DE-02 - Loamy 10-12" (25x14)									
1987	256	176	829	1261	20	14	66	100	44 (Mid Seral)
1990	141	61	239	441	32	13	55	100	50 (Mid Seral)
1995	345	97	753	1195	29	8	63	100	45 (Mid Seral)
North Hanks Creek - DE-03 - Loamy Slope 12-16" (25x12)									
1987	635	179	1601	2415	26	8	66	100	62 (Late Seral)
1990	350	175	1018	1543	23	11	66	100	55 (Late Seral)
1995	616	982	2446	4044	16	24	60	100	60 (Late Seral)
Steer - DE-05 - Loamy 8-10" (25x19)									
1987	86	491	441	1018	8	49	43	100	49 (Mid Seral)
1990	98	84	93	275	36	30	34	100	44 (Mid Seral)
1995	270	406	679	1355	20	30	50	100	55 (Mid Seral)

*Ecological Condition Class Ratings

0-25 Early Seral

26-50 Mid Seral

51-75 Late Seral

76-100 Potential Native Community (PNC)

Appendix 11E
South Deeth and Pole Creek Allotments
Comparison of Grazing Preferences Between Alternatives

Allotment	Permittee	Current Preference (Active AUMs)	No Action Alternative (Active AUMs)	No Grazing Alternative (Active AUMs)	Alternative 3 and 44 (Active AUMs)	
South Deeth	Cross Ranch Grazing LLC	17,488	17,488	0	3	4
					15,199 ²	15,199 ²
	Eureka Livestock LLC	120 ¹	120 ¹	0	92	92
Pole Creek	Cross Ranch Grazing LLC	561	561	0	561	
	Eureka Livestock LLC	37 192 ¹	37 192 ¹	0	37+192 = 229	

¹ AUMs associated with the Indian Creek land exchange. Through evaluation, the BLM will determine how many of these AUMs will be converted to active use.

² The active use AUMs are the highest level of AUMs normally available during any one year of the grazing cycle, and can be less in some years depending on the pastures to be grazed and the grazing privileges allocated to each pasture for the use period.

Appendix 12
South Deeth Allotment
Results of a Re-analysis of the Ecological Condition and Frequency Trend Information

Key Area DE-01 – Winter Creek Pasture

Regarding the conclusions on frequency trend for the key species Thurber needlegrass and Webber needlegrass, the 2003 allotment evaluation showed a significant increase in Thurber needlegrass and a significant decrease in Webber needlegrass between 1987 and 1995. Although we did see some significant increases in the needlegrasses as a result of the wet cycle of 1993/4 – 1998/99, it seems more likely there were some species misidentifications that artificially showed such dramatic changes. For example, the frequency of Thurber needlegrass in 1987 was reported as 35%, increasing somewhat to 41.5% in 1990, and then 49% in 1995. In contrast, the frequency of Webber needlegrass in 1987 was reported as 18%, dropping to 0.5% in 1990, and rising to 7.5% in 1995. It seems inconsistent to see a significant rise of Thurber needlegrass and a significant decline of Webber needlegrass at the same time. I believe there may have been species misidentification between these two species that can look similar to each other, especially if the seedheads of one or both species are not present when the data is recorded. I would suggest that when we collect frequency data again that a generic category of needlegrass (*Stipa* sp.) be used in addition to separating Thurber and Webber needlegrasses. This could help reduce the artificial swings that can occur when it is difficult to differentiate between the two species.

The allotment evaluation concluded that ecological conditions rose from 49% in 1987 to 63% in 1990, and then 66% in 1995. After reviewing the data further, it appears that there was a significant rise in the condition rating between 1987 and 1995; however, the point spread between those years is about 8% instead of 17%. In 1987, the data was collected on August 3rd and showed Thurber needlegrass as being in the seed dissemination stage (stage 6). In 1995, the data was collected on August 2nd and showed Thurber needlegrass in the cured stage (stage 7). Correctly identifying the phenological stage is important because the phenological/dry weight correction factor between growth stages can make a significant difference in the percent composition and ecological condition rating. We suspect the growth stages for 1987 and 1995 should be the same. If we were to slide the growth stage of Thurber needlegrass in 1995 back to stage 6 (seed dissemination), that would reduce the percent composition in 1995 from 38% to about 20%. Since Thurber needlegrass is only allowed up to 25% composition in the condition rating, the actual reduction in the final rating for 1995 would only be a reduction of 5% ($25\% - 20\% = 5\%$), thus the condition rating for 1995 would be 61% instead of 66%. In addition, Hoods phlox accounts for 30% of the total composition in 1987, whereas it accounts for only 6% in 1995. The production of Hoods phlox can vary considerably between years, with the amount and timing of precipitation and variations in temperatures allowing for substantial differences in production between years. We have seen this large of a spread in composition of Hoods phlox at other study sites resulting in the percent composition for the other species being depressed when there has actually been little change for the other species. This relative reduction in percent composition of other species makes it difficult to compare percent compositions and condition ratings between years. If we were to adjust the percent composition of Hoods phlox in 1987 to be 6%, as reported in 1995, instead of the 30% reported in 1987, the overall condition rating in

1987 would rise about 4% to a rating of 53%. With the above adjustments, the condition rating would be 53% in 1987 and 61% in 1995, only a difference of 8% instead of 17% between those two years. This would change the baseline condition rating (1987), but would not change the conclusion that the data indicates there was an increase in the ecological condition rating for this key area.

Key Area DE-02 - South Hanks Pasture

The allotment evaluation showed the frequency of Nevada bluegrass (PONE3) declined significantly from 1987/1990 to 1995. After reviewing the frequency data further, there may have been some difficulty in distinguishing Nevada bluegrass from Sandberg bluegrass. For example, in 1987 the frame 42R shows 5 Sandberg bluegrass (POSA) and zero PONE3; however, in 1995, there were 3 POSA and 3 PONE3 in the same frame. In frame 45L in 1987, there were zero POSA and 2 PONE3; however, in 1995, there were 3 POSA and zero PONE3. The variation within these frames, and other frames, raises some question as to whether or not there was a significant decrease in PONE3. Additional data collections will hopefully clarify.

The allotment evaluation also showed the frequency of Thurber needlegrass declining dramatically from 1987 to 1990, and then rising again in 1995, but the difference between 1987 and 1995 was still considered a significant decline. After reviewing the frequency data further, there may have been some difficulty identifying Thurber needlegrass as well as Webber needlegrass, and distinguishing between these two similar looking species. In 1987, the data forms recorded both Thurber needlegrass (STTH2) and Webber needlegrass (ORWE); however, in 1990, the data forms also have a generic needlegrass category (STIPA) indicating that it was too difficult at times to identify whether the needlegrass was Thurber needlegrass or Webber needlegrass. The drop in the frequency of Thurber needlegrass from 42% in 1987 to 4% in 1990 could be partly attributed to a rise in seedlings as a result of the preceding wet cycle of 1983-86 and still present in 1987, and the loss of seedlings as a result of the drought cycle that prevailed from 1987/88 – 91/92. However, the dramatic drop shown for Thurber needlegrass between 1987 and 1990 is more likely due to the difficulty in distinguishing this species from Webbers needlegrass. As noted above, there was a generic category for needlegrasses in 1990 in addition to separate categories for Thurber needlegrass and Webber needlegrass. The frequency for the generic needlegrass category in 1990 was 25%, which is similar to the frequency recorded for Thurber needlegrass in 1995. Therefore, it seems reasonable to say the frequency of Thurber needlegrass did not decline from 42% in 1987 to 4% in 1990. In conclusion, since it can be difficult to distinguish between Thurber needlegrass and Webber needlegrass, especially if there are no seeds on the plants to help distinguish between the two species, there is some question as to the accuracy of the data for any year. This is not to say the data that was collected is inaccurate, but there is some question on this when there aren't notes to explain whether or not it was easy to accurately identify each species. As noted in 1990, there was a generic category used to record the presence of any needlegrass species, and would recommend this be continued in future data collections. This category would capture the presence of any needlegrass species regardless of whether or not we can readily identify some or all of these grasses to the species level. This will help reduce the variations possible in trying to distinguish between the two species, and give us a more reliable way of tracking trends of the needlegrasses.

Regarding ecological condition ratings, there is a discrepancy in placing both Wyoming big sagebrush and Basin big sagebrush in growth stage 2 on August 5, 1987, when both of these sagebrush species were recorded as being in growth stage 3 at nearby key areas about the same time. This makes a difference in the phenological/dry weight correction factors applied to arrive at the percent composition for each species. By applying the growth stage 3 pheno./dry weight correction factors to both the sagebrush species, the total weight of each of the sagebrush species drop substantially. This results in changes in percent composition for all of the grass, forb, and shrub species. When these changes are applied, the final condition rating for 1987 moves slightly upward from 44% to 48%. This correction for 1987 doesn't change the conclusions regarding ecological conditions, which basically shows there were not significant changes in the ecological condition ratings between 1987 and 1995 (1987 = 48%; 1990 = 50%; 1995 = 45%).

Key Area DE-03 - North Hanks

Regarding the data on which the ecological condition ratings are based, it is interesting to note that the growth stages for both bluebunch wheatgrass and Idaho fescue were recorded as being in stage 2 (boot stage) on July 25, 1995, when we would expect they would normally be in stage 5 (seed ripe) or stage 6 (seed dissemination). However, even if the percent compositions were adjusted using the correction factors for stage 5 or 6, the change in the ecological condition rating would only be 1-2 percent, which is insignificant.

Key Area DE-05 – Steer Pasture

The frequency data displayed in the allotment evaluation shows Thurber needlegrass increasing significantly between 1987 and 1990/95. After reviewing the data further, it is apparent that there were no significant increases in Thurber needlegrass. Again, the differences between years are due to the observers in 1987 recording both Thurber needlegrass and Webber needlegrass; whereas, the observers in 1990 and 1995 recorded all the needlegrasses as only Thurber needlegrass. Future data collections will hopefully clarify this variation. In addition, it is suggested that data be collected on the needlegrass species regardless of whether or not we can readily identify some or all of these grasses to the species level. This will help reduce the variations possible in trying to distinguish between the two species, and give us a more reliable way of tracking trends of the needlegrasses.

Appendix 13
Ground cover data for the Isolation, Stag, and Charleston Complex Fires.

ISOLATION FIRE

Vegetation (Basal)				Litter				Bare Ground			
Plot ID	2002	2003	2004	Plot ID	2002	2003	2004	Plot ID	2002	2003	2004
ISBB		51%	22%	ISBB		13%	50%	ISBB		35%	21%
NSW - 01	1%	33%	32%	NSW - 01	38%	19%	35%	NSW - 01	36%	48%	28%

STAG FIRE

Vegetation (Basal)				Litter				Bare Ground			
Plot ID	2002	2003	2004	Plot ID	2002	2003	2004	Plot ID	2002	2003	2004
BKHP		9%	4%	BKHP		1%	40%	BKHP		87%	55%
CBW - 01	1%	23%	9%	CBW - 01	23%	22%	61%	CBW - 01	62%	55%	30%
CCW - 01	100%	30%	4%	CCW - 01	0%	49%	77%	CCW - 01		20%	19%
CCW - 02	29%	41%	0%	CCW - 02	11%	19%	59%	CCW - 02	58%	37%	35%
CCW - 03	0%	35%	8%	CCW - 03	100%	43%	69%	CCW - 03		21%	23%
CCW - 04	21%	44%	8%	CCW - 04	2%	11%	48%	CCW - 04	77%	44%	44%
CCW - 05	19%	22%	6%	CCW - 05	17%	44%	69%	CCW - 05	58%	32%	25%
CCW - 06	0%	59%	25%	CCW - 06	100%	32%	62%	CCW - 06		9%	13%
CCW - 07	14%	69%	28%	CCW - 07	0%	9%	57%	CCW - 07	79%	21%	17%
CCW - 08	0%	51%	19%	CCW - 08	100%	34%	55%	CCW - 08		14%	18%
CCW - 09	6%	54%	15%	CCW - 09	12%	6%	69%	CCW - 09	52%	23%	6%
CCW - 10	20%	39%	13%	CCW - 10	9%	12%	61%	CCW - 10	58%	48%	24%
DRBB	0%	26%	2%	DRBB	0%	6%	50%	DRBB		67%	38%
SGWL	9%	19%	2%	SGWL	16%	25%	54%	SGWL	73%	56%	41%
STBB	7%	31%	8%	STBB	10%	23%	50%	STBB	61%	36%	31%
STRW	8%	14%	5%	STRW	3%	12%	34%	STRW	88%	64%	58%

CHARLESTON COMPLEX FIRE

Vegetation (Basal)			Litter			Bare Ground		
Plot ID	2007	2008	Plot ID	2007	2008	Plot ID	2007	2008
CHNR - 03	2%	2%	CHNR - 03	29%	47%	CHNR - 03	50%	51%
CHNR - 04	5%	2%	CHNR - 04	20%	59%	CHNR - 04	44%	37%
CHNR - 05	2%	2%	CHNR - 05	10%	5%	CHNR - 05	8%	5%
CHWS - 03	5%	78%	CHWS - 03	56%	18%	CHWS - 03	23%	4%
GORD - 01	0%	0%	GORD - 01	67%	41%	GORD - 01	30%	59%
GOWK - 02	0%	4%	GOWK - 02	30%	49%	GOWK - 02	63%	39%
GOWD - 03	1%	5%	GOWD - 03	36%	41%	GOWD - 03	51%	51%
MAWD - 00	7%	7%	MAWD - 00	38%	59%	MAWD - 00	50%	30%